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PROFESSÉS

A L'ÉCOLE DES MINES DE PARIS

PAR

M. J. CALLON
INSPECTEUR GÉNÉRAL DES MINES

DEUXIÈME PARTIE

COURS D'EXPLOITATION DES MINES

TOME DEUXIÈME

ATLAS

PARIS
DUNOD, ÉDITEUR
LIBRAIRE DES CORPS DES PONTS ET CHAUSSÉES ET DES MINES
49, QUAI DES AUGUSTINS, 49

1874

Droits de propriété et de traduction réservés.

PARIS. — IMPRIMERIE ARNOUS DE RIVIÈRE, RUE RACINE, 26.

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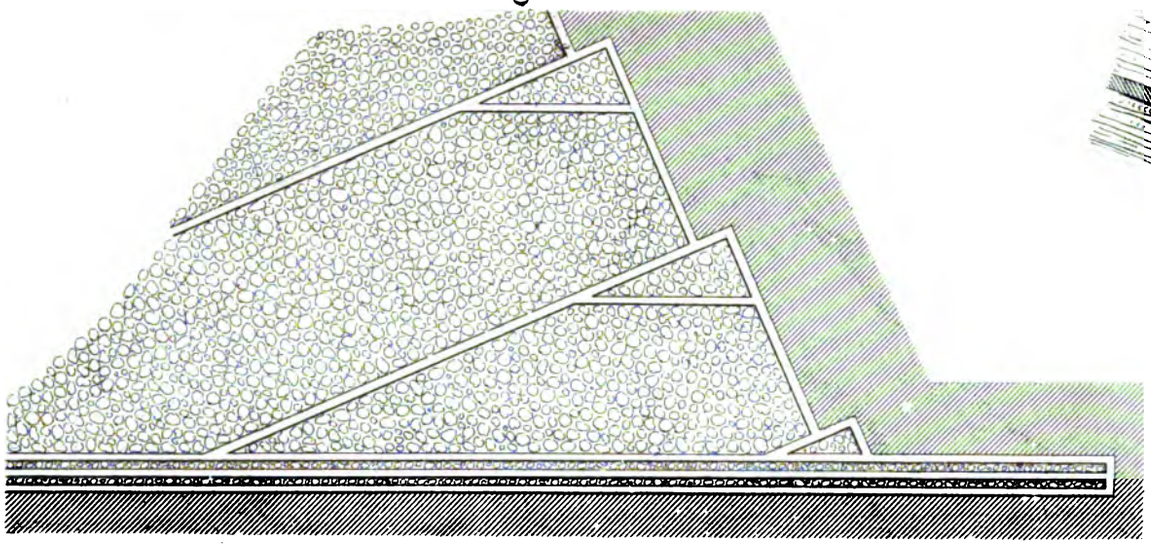

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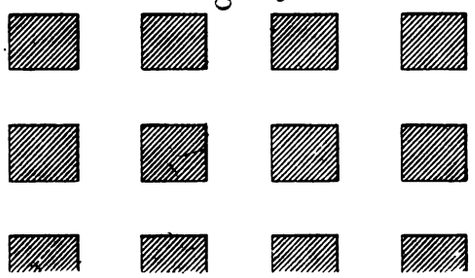

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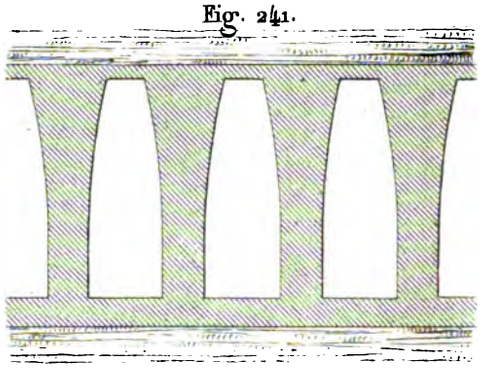

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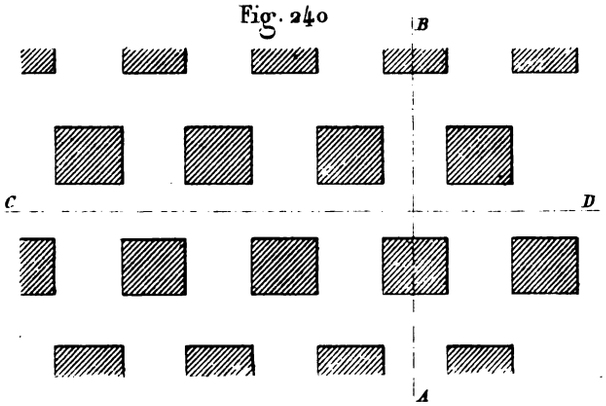

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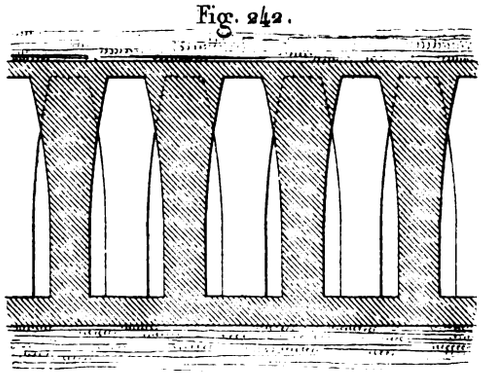
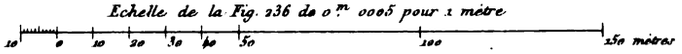


Echelle de la Fig. 236 de 0^{m}. 0005 pour 1 mètre



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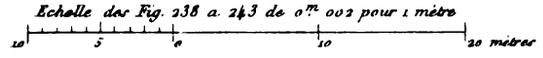

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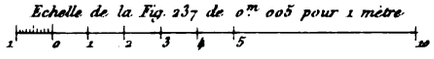

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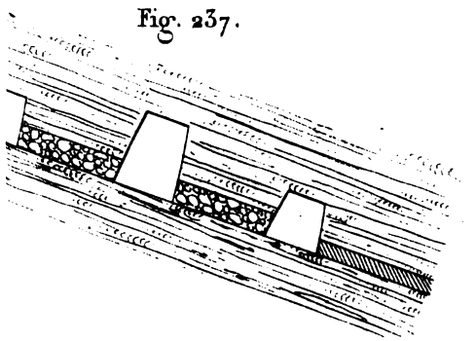

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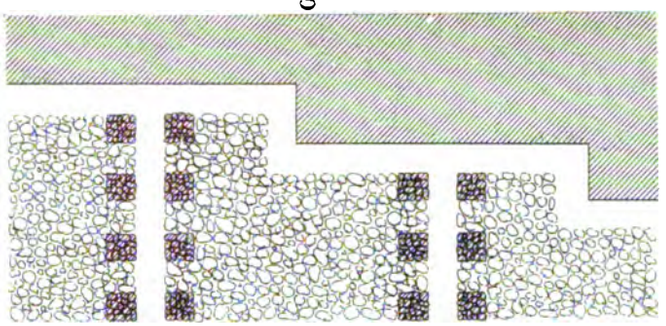

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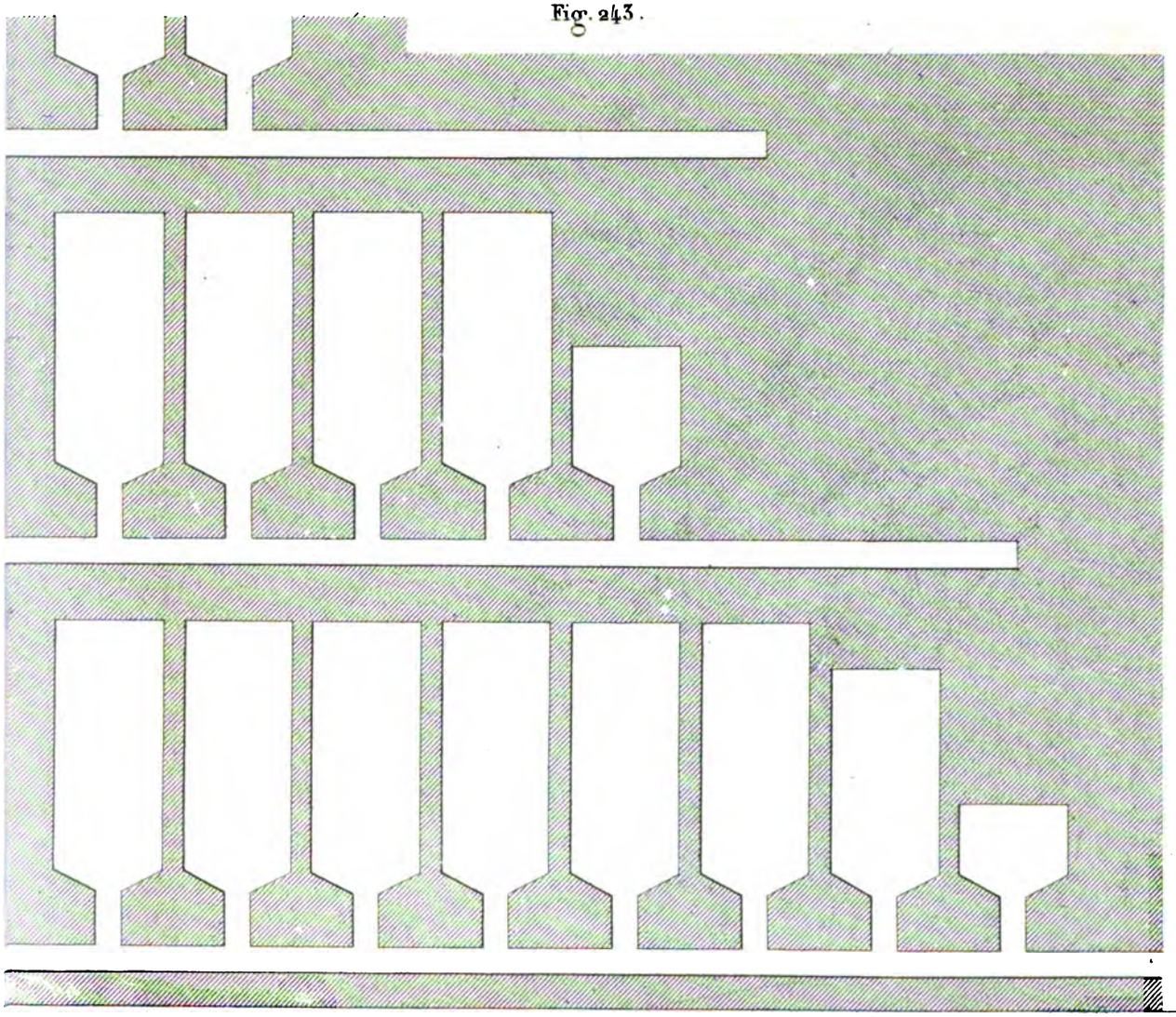

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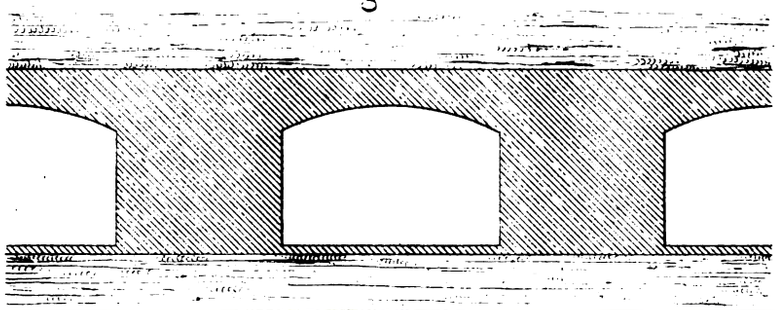

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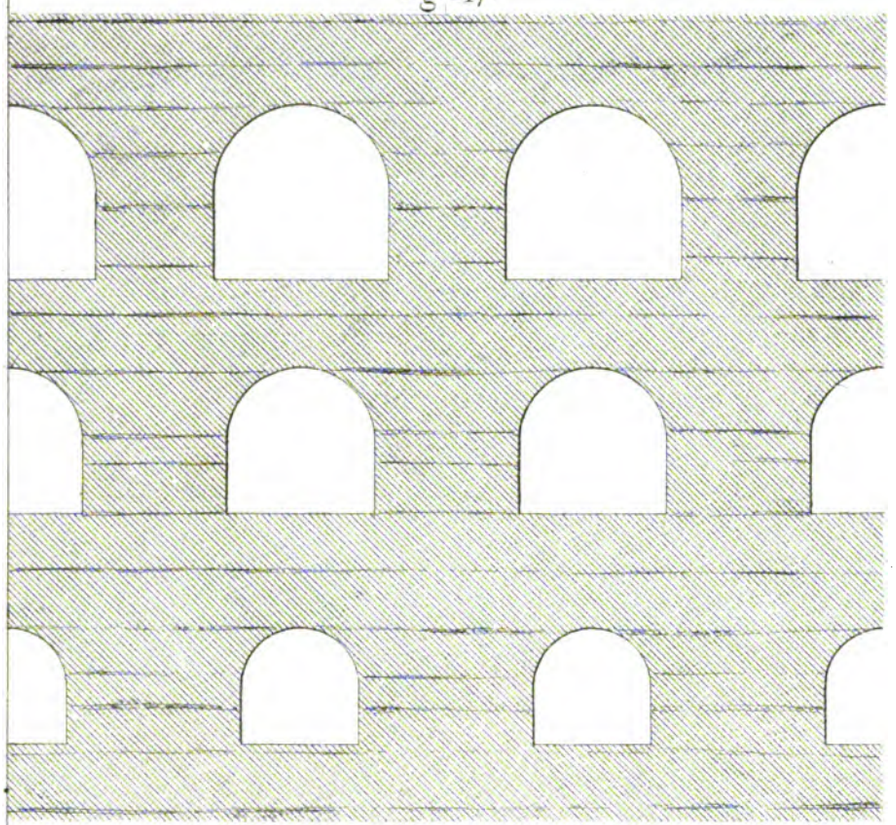
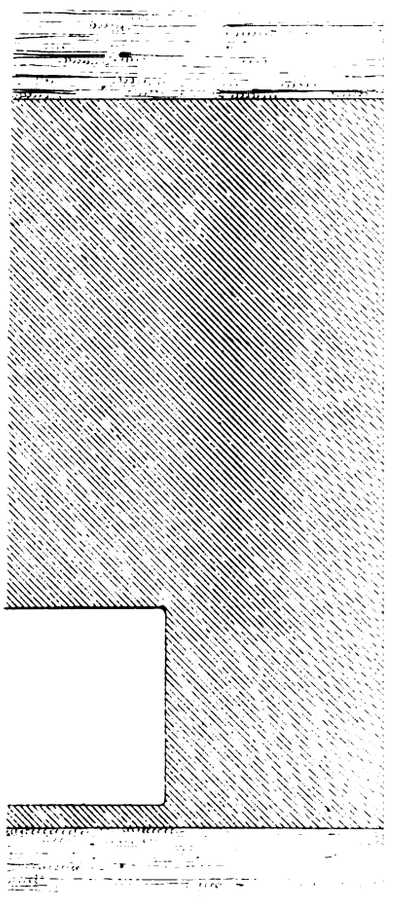
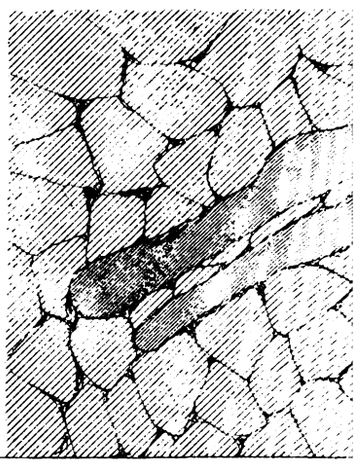
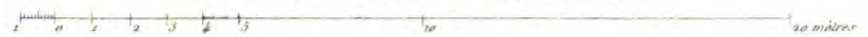






Echelle des Fig 244 à 246 de 0m 005 pour 1 mètre.



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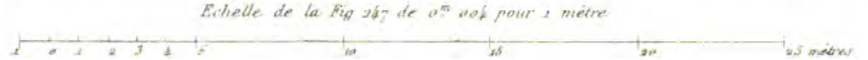

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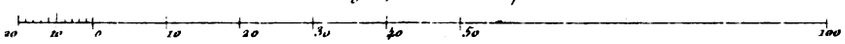

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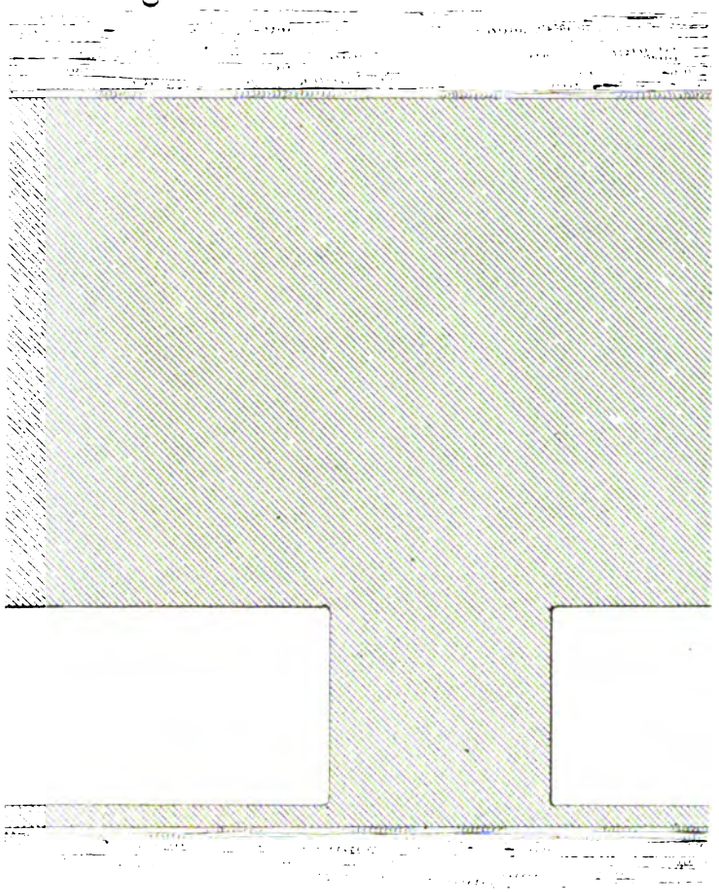

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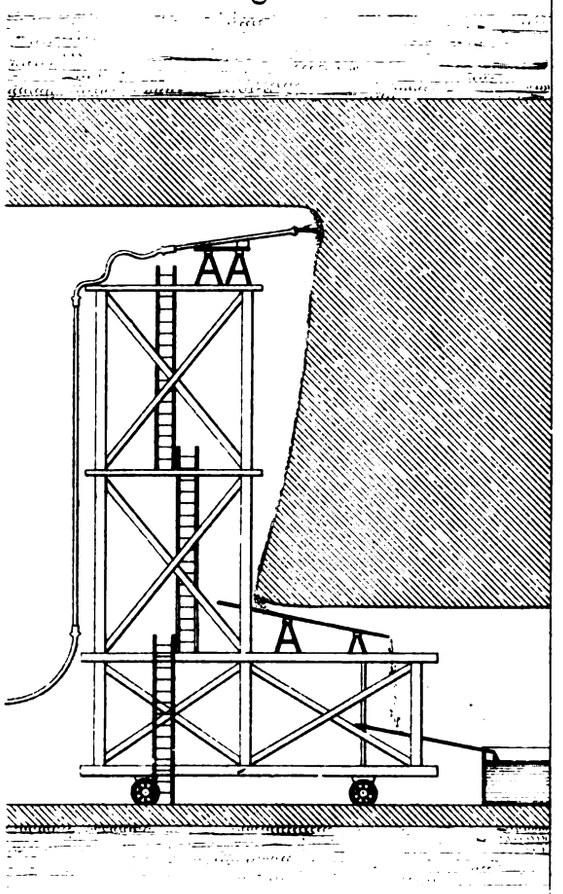

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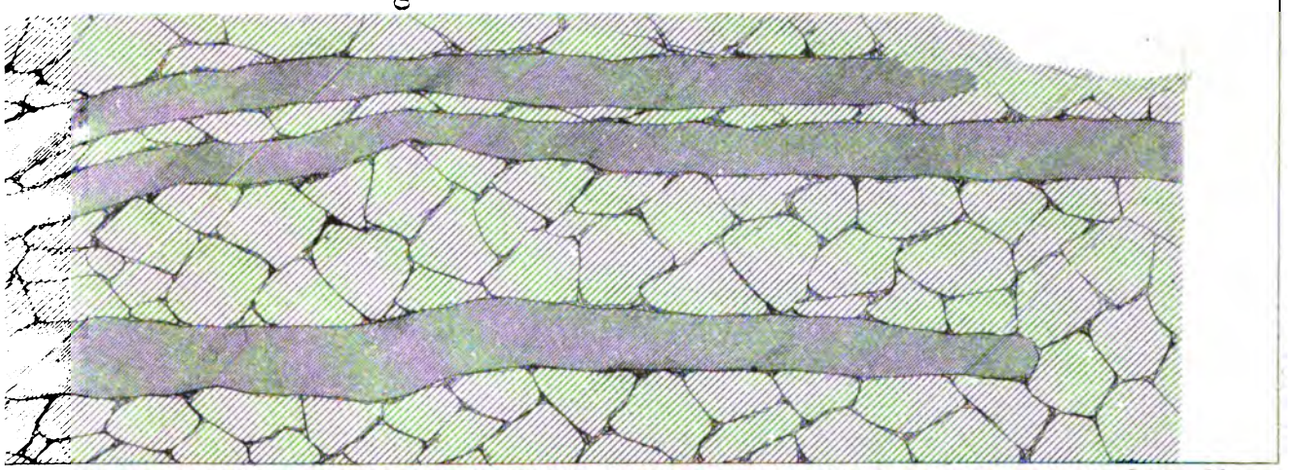

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Fig. 249. A.

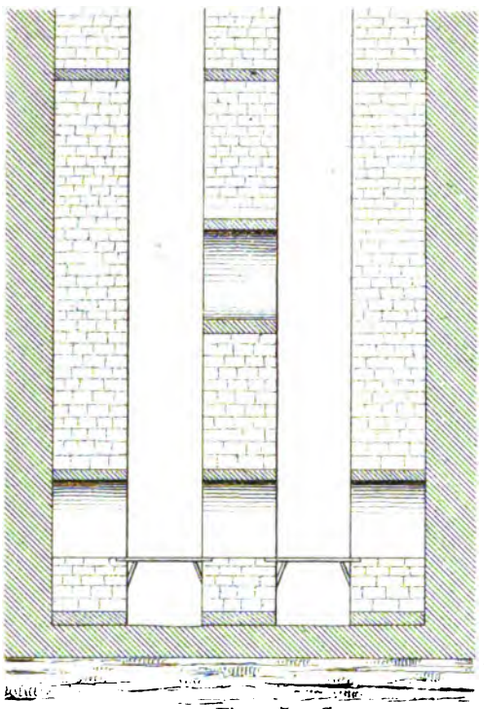


Fig. 249 B.

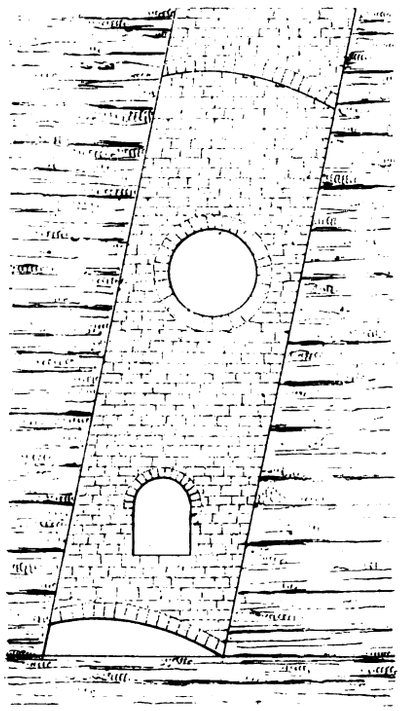


Fig. 2

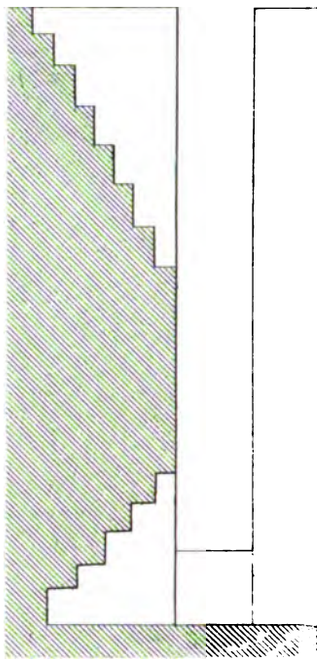
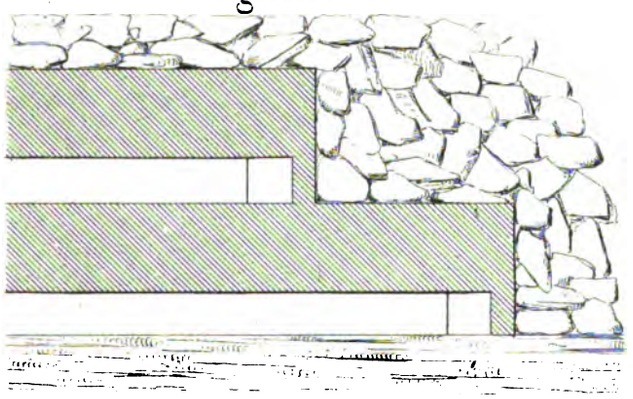


Fig. 250. C



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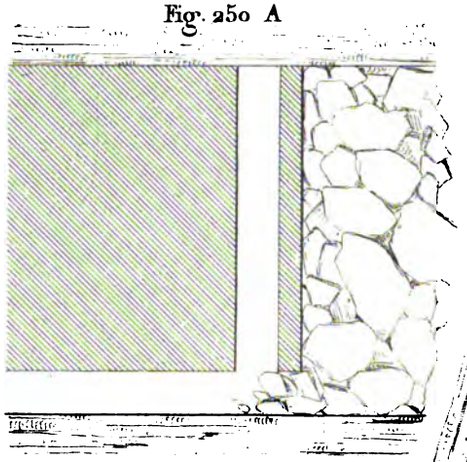

Echelle des Fig. 249 et 250 de 0m. 003 pour 1 mètre

1 0 1 2 3 4 5 10 20 30 40 mètres

Echelle de la Fig. 251 de 0m. 001 pour 1 mètre

10 5 0 10 20 30 40 50 100 mètres

Echelle de la Fig 252 de 0m. 002 pour 1 mètre

10 5 0 10 20 30 40 50 mètres

149 C.

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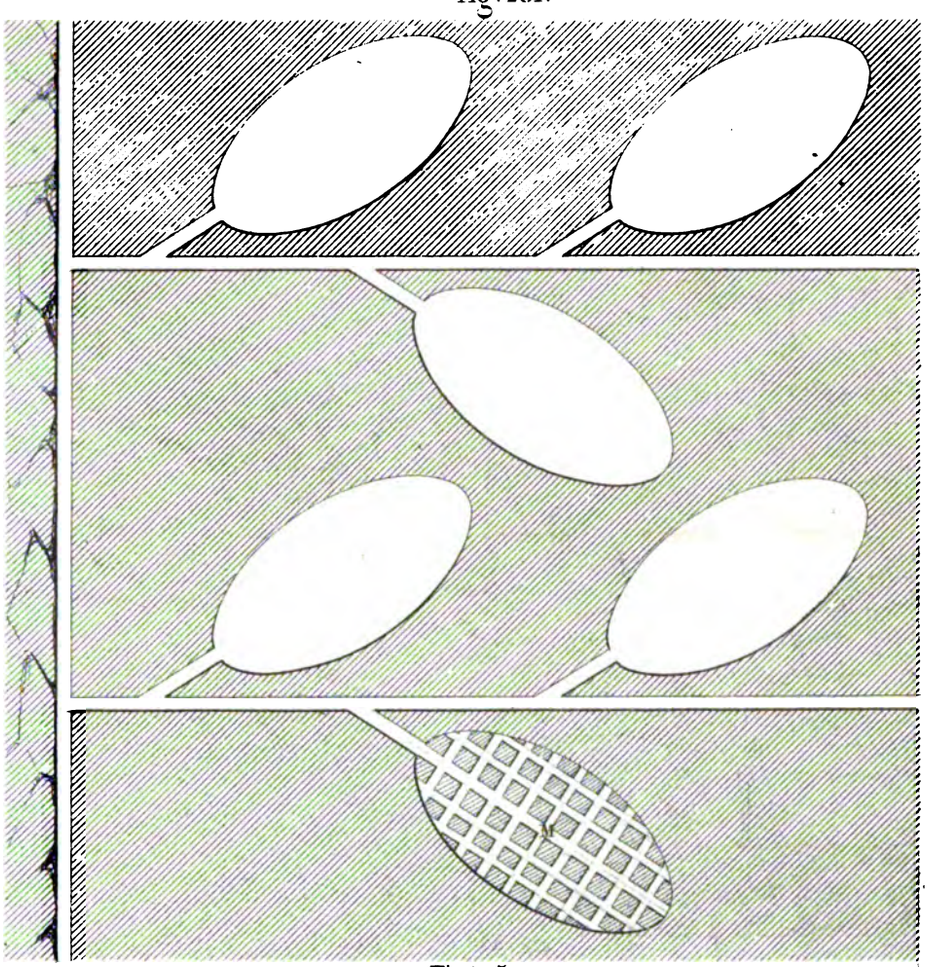

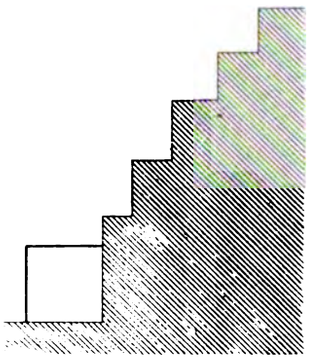

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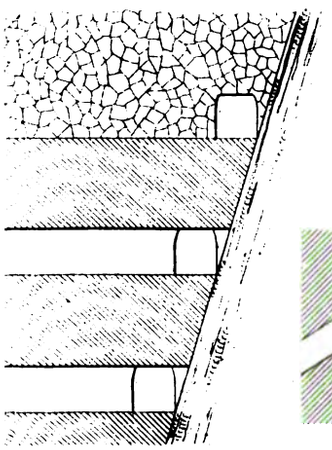

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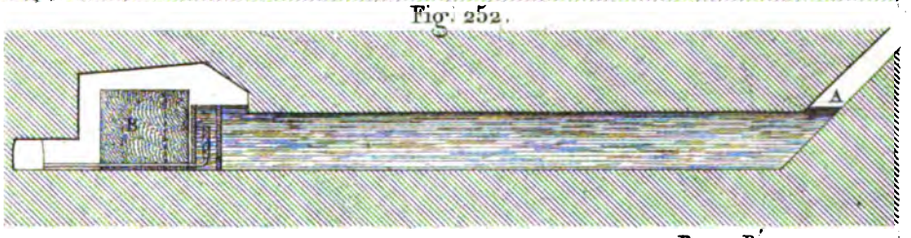

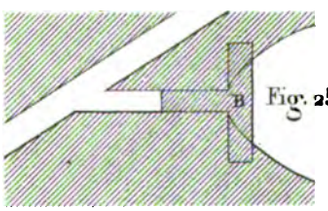

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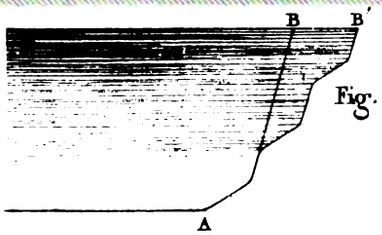

Fig. 253.

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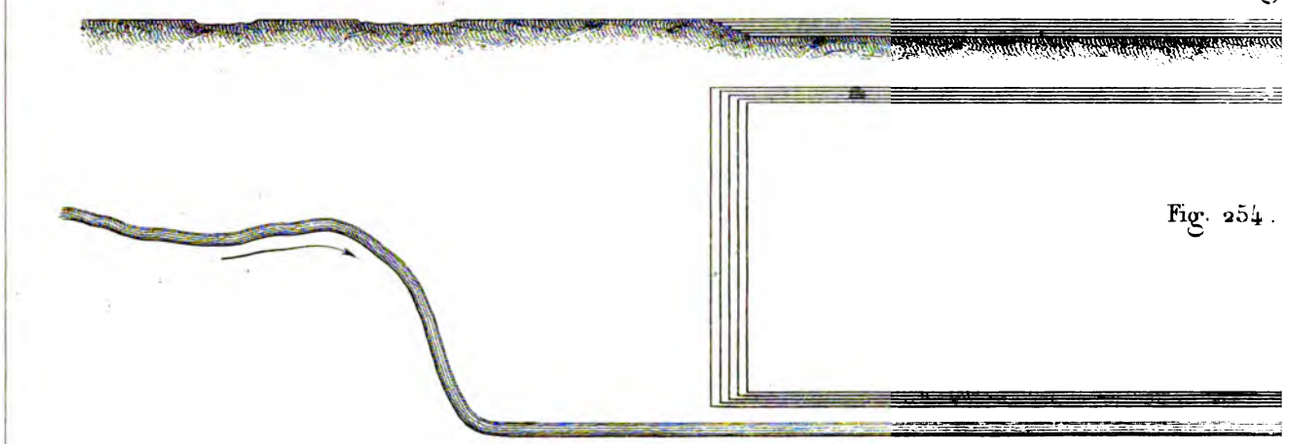
Fig



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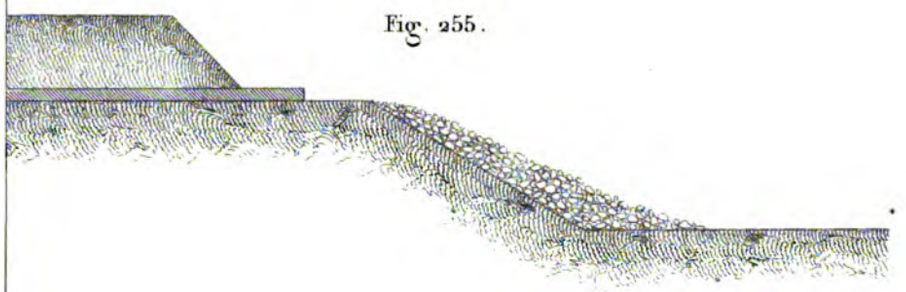

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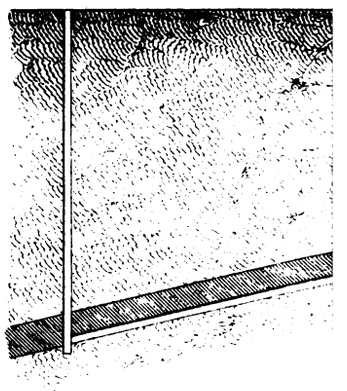
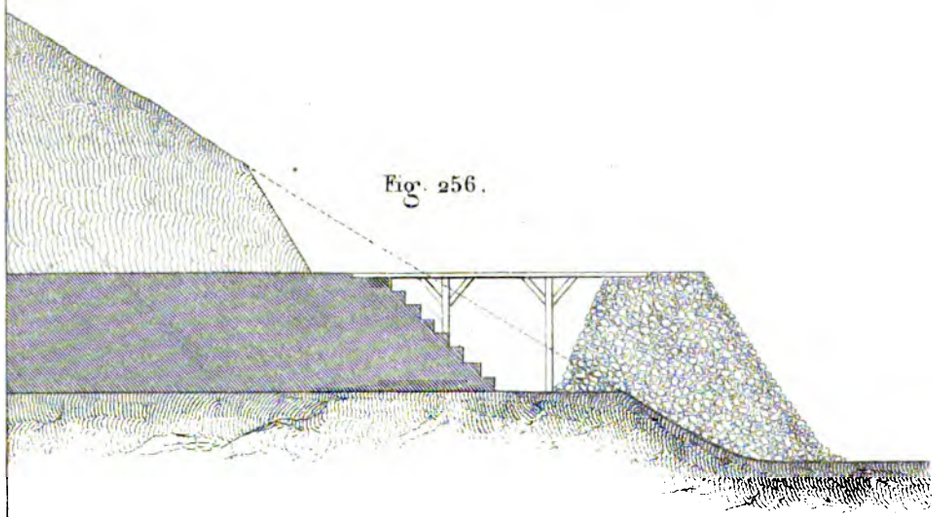


Fig.



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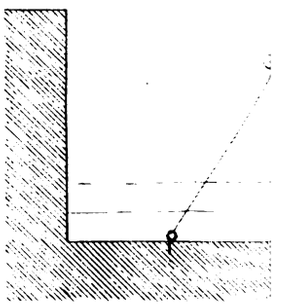

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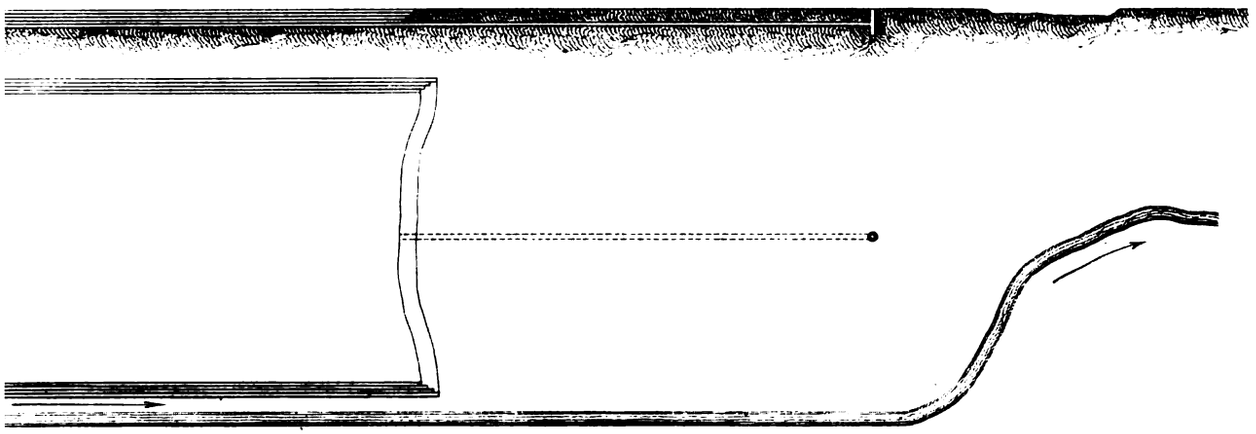

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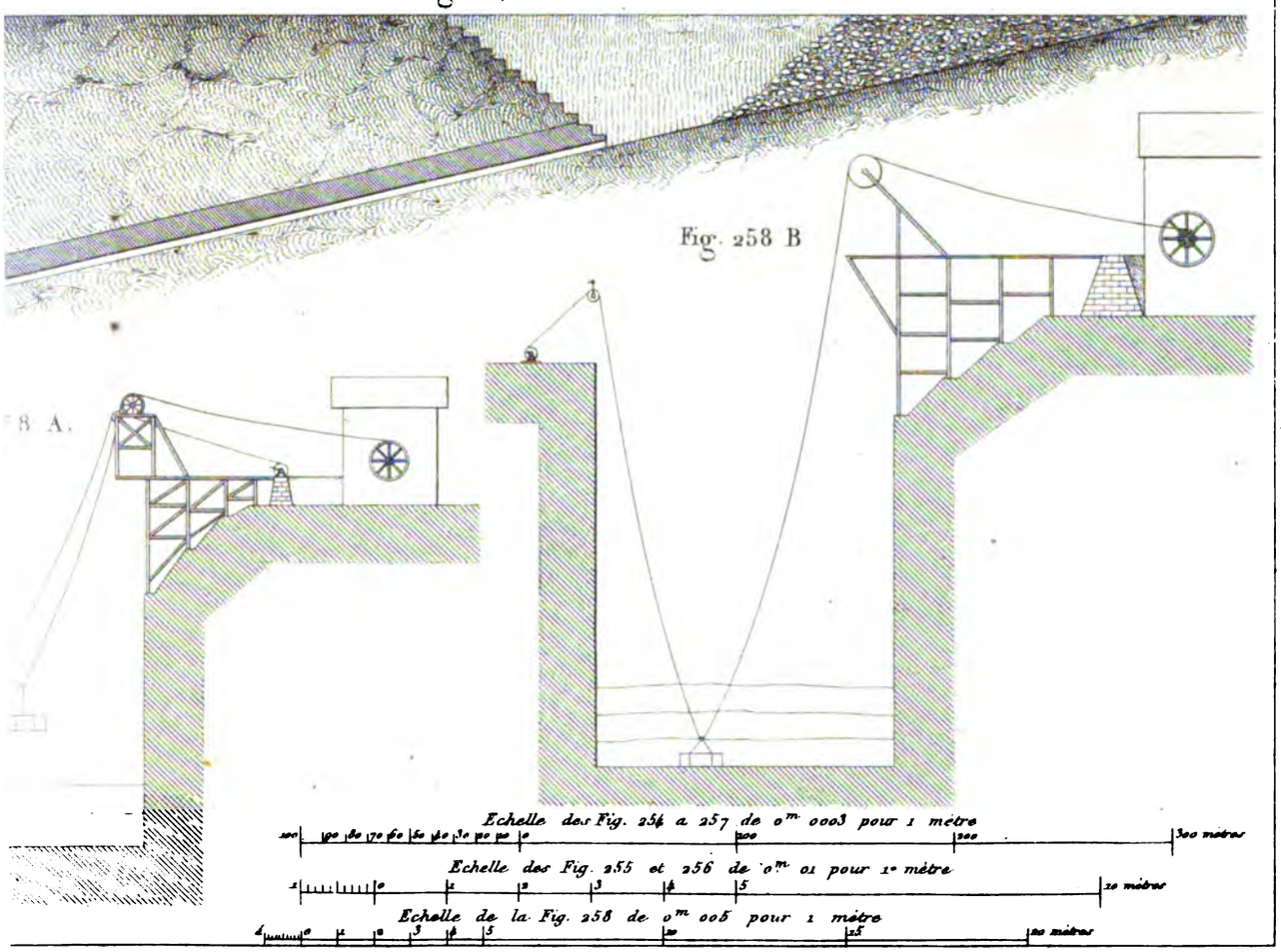
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Echelle des Fig. 255 et 256 de 0m. 01 pour 1e mètre
Echelle de la Fig. 258 de 0m. 005 pour 1 mètre

Fig. 260.

Fig. 259.

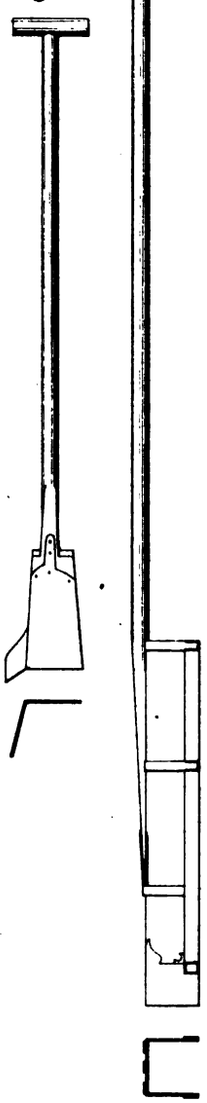
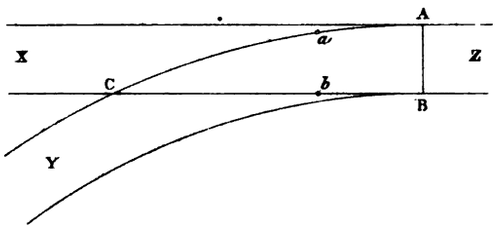


Fig. 261.

Fig. 265.



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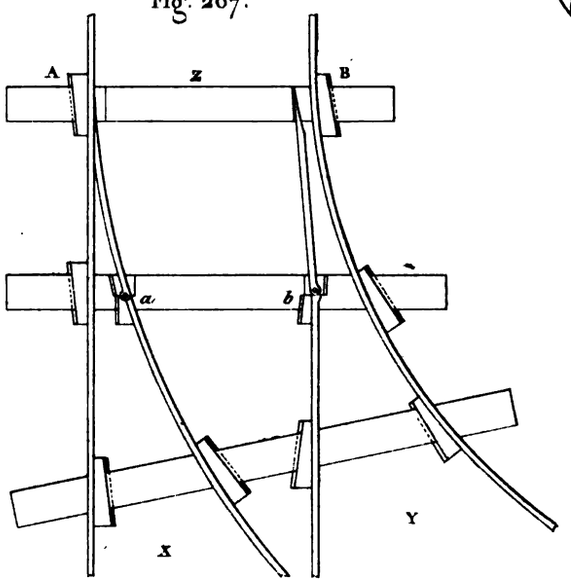

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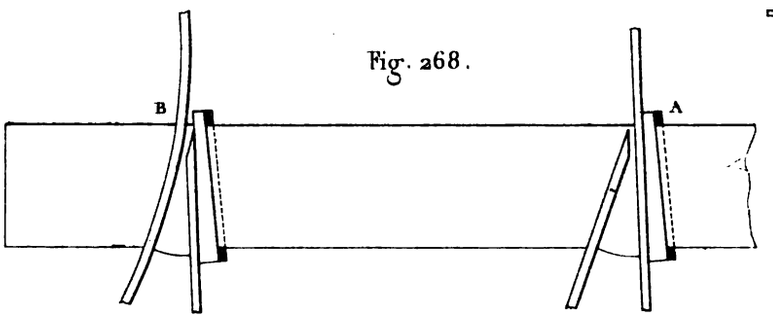

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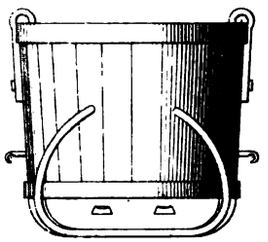

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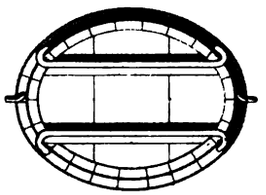

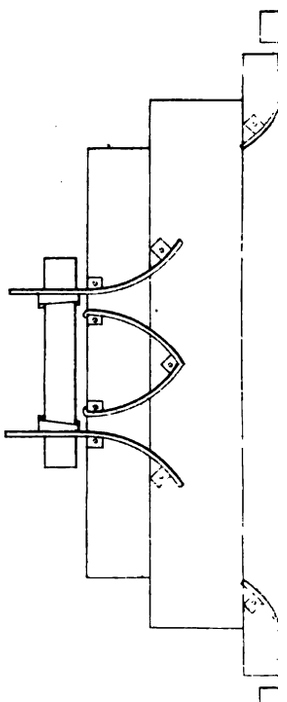

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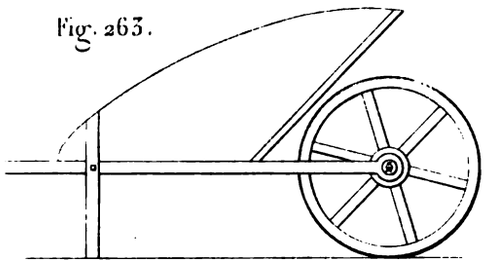

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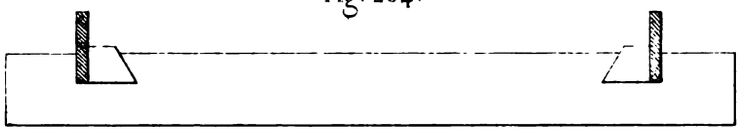

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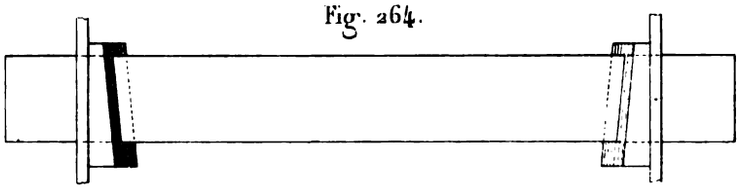

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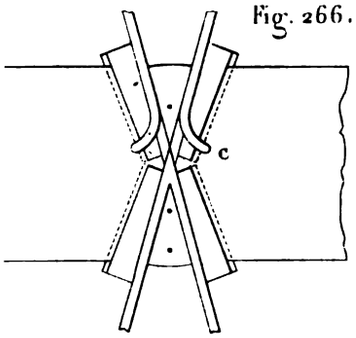

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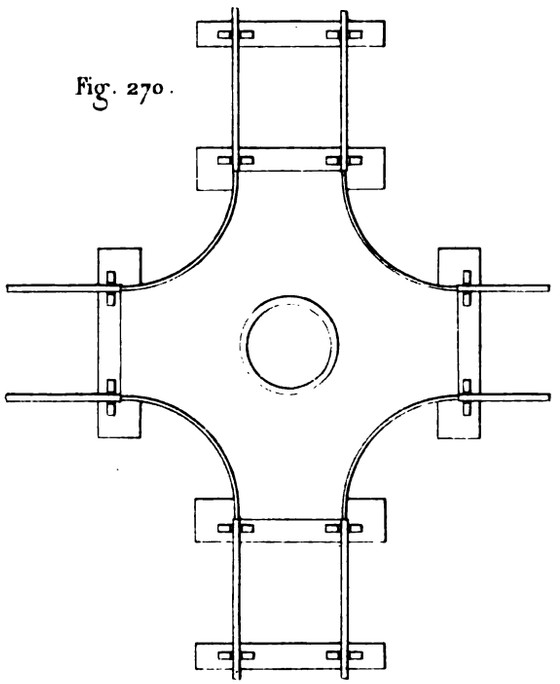

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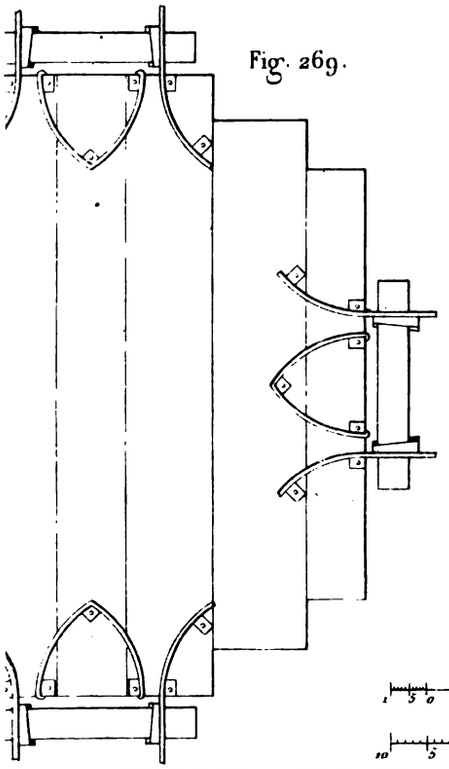

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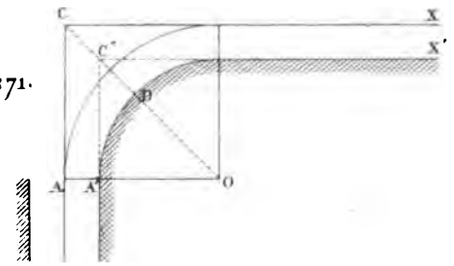
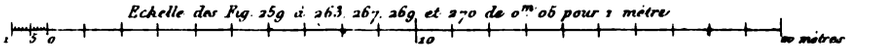


Echelle des Fig. 259 à 263. 267. 269 et 270 de 0m 05 pour 1 mètre



Echelle des Fig 264. 266 et 268 de 0m 10 pour 1 mètre

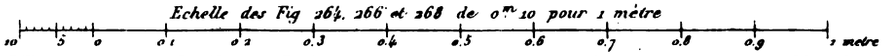


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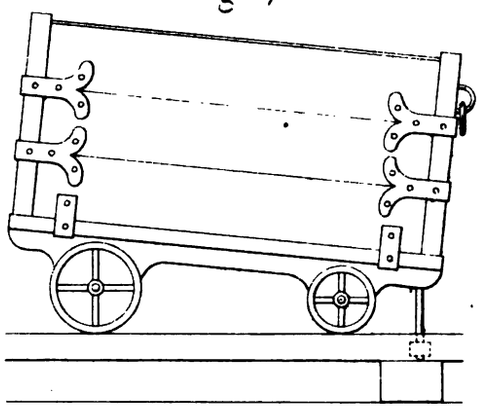
Fig. 272.



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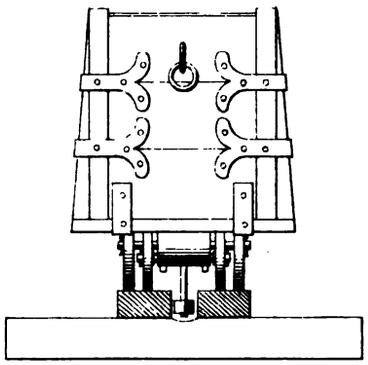

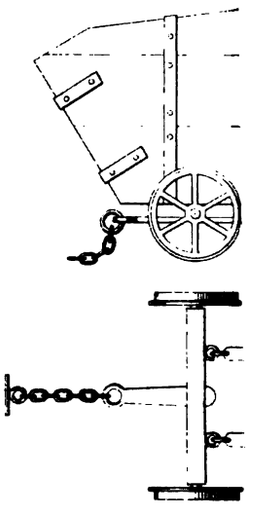

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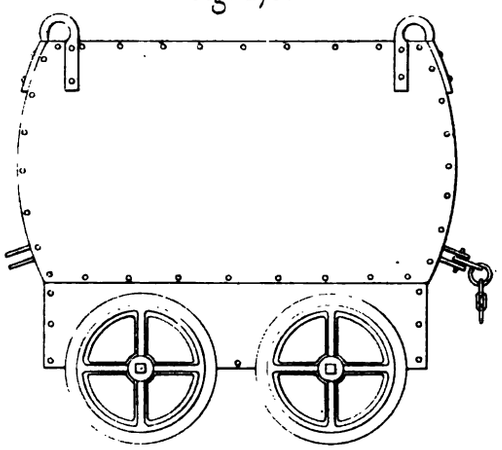

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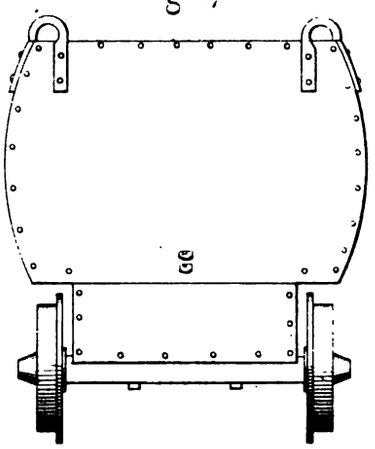

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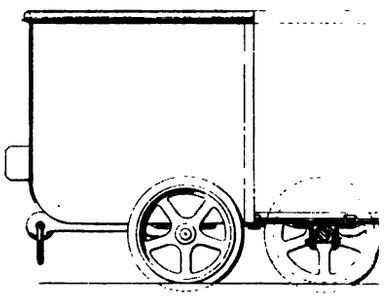

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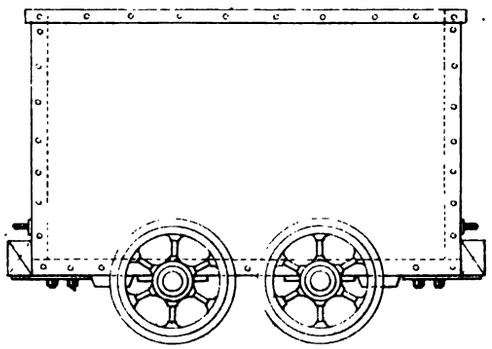

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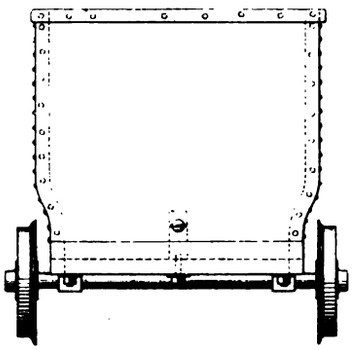

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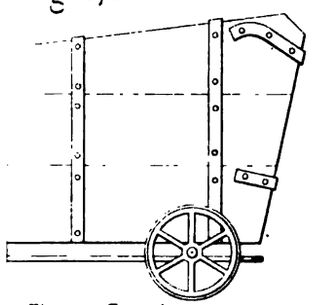

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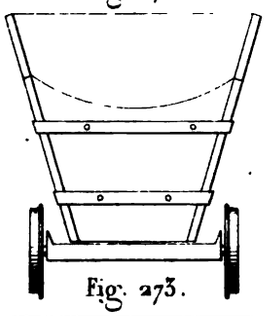

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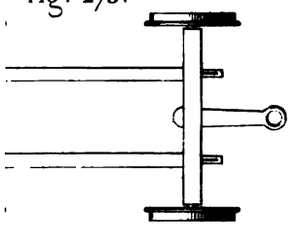

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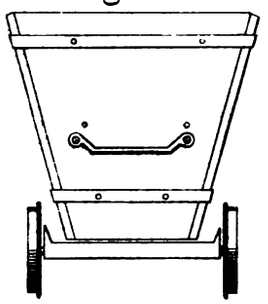

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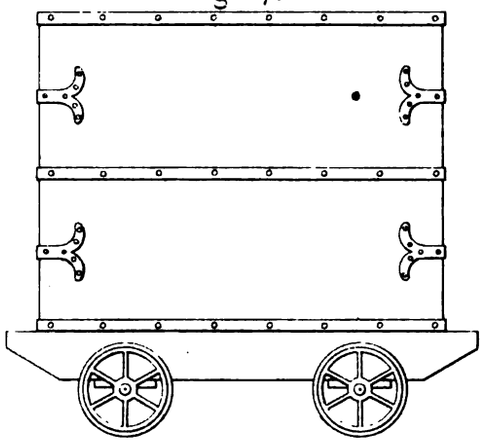

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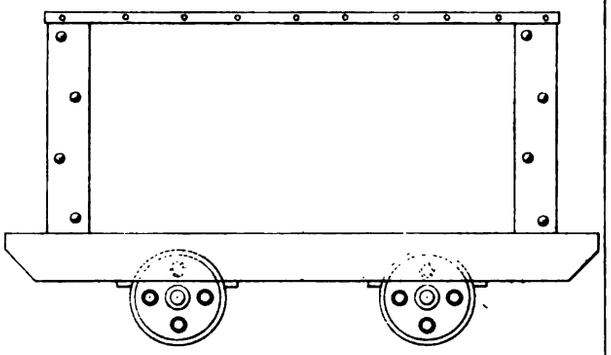

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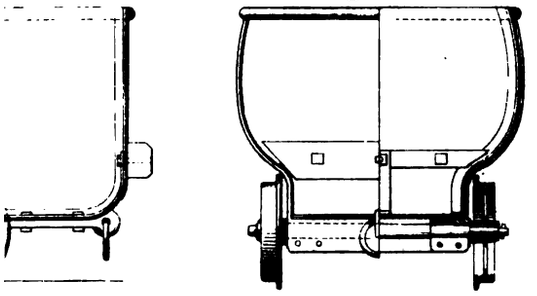

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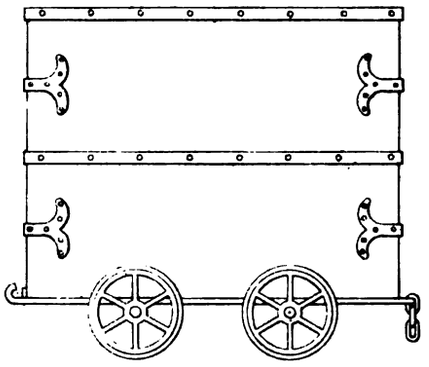

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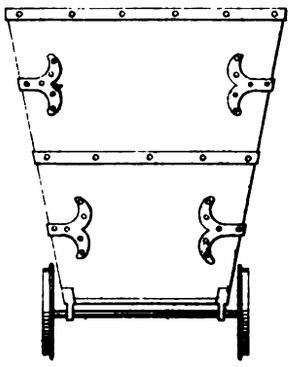

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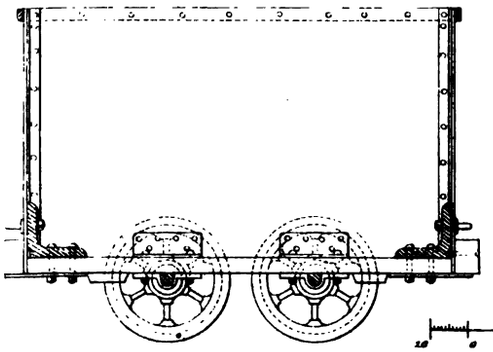

Echelle de 0^m 05 pour 1 mètre

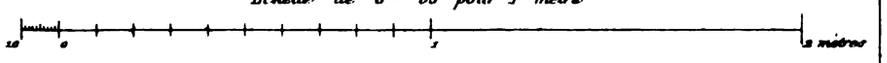

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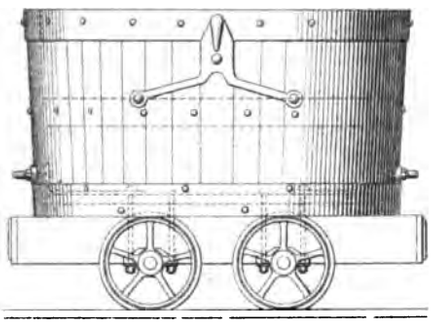
Fig. 278.



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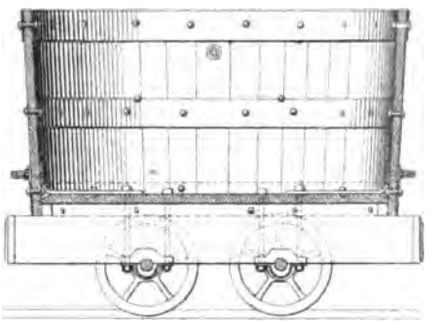

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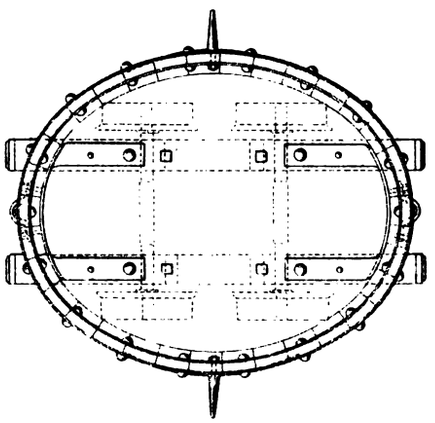

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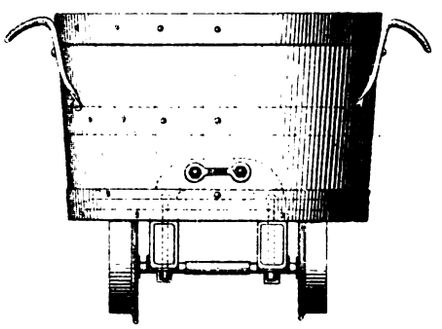

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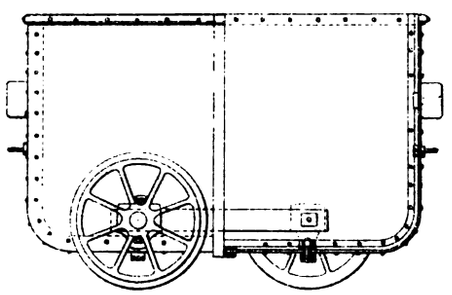

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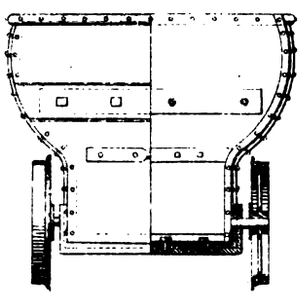
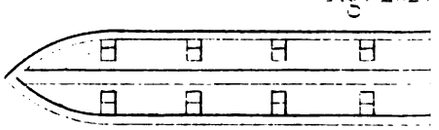
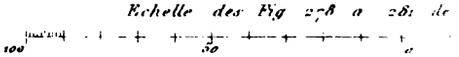


Fig. 282.

Fig. 282.



Echelle des Fig 278 a 281 de



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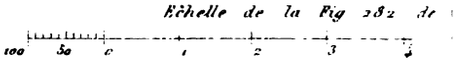

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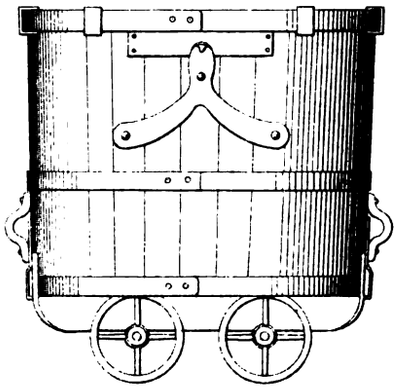
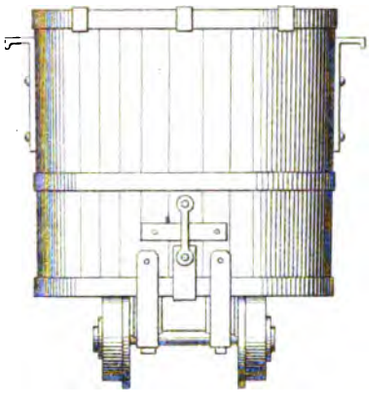


Fig. 279..



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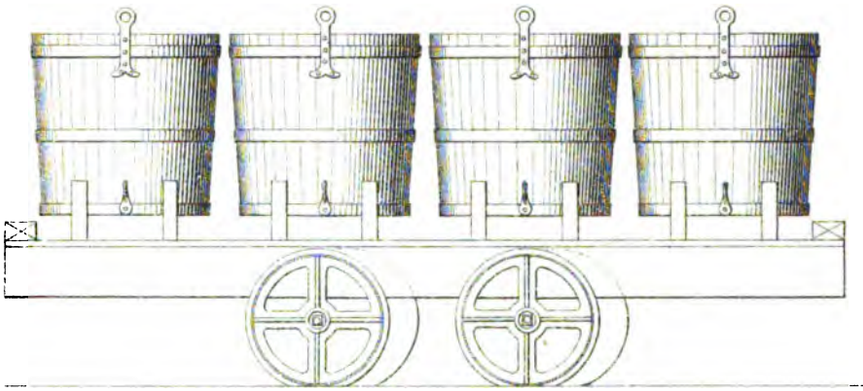

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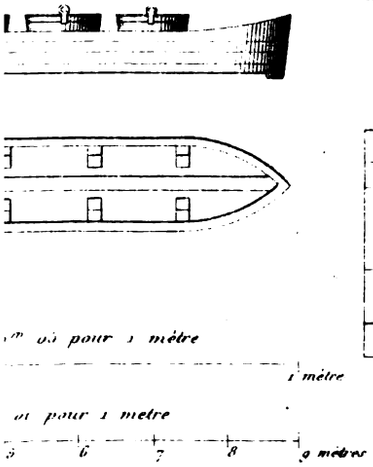

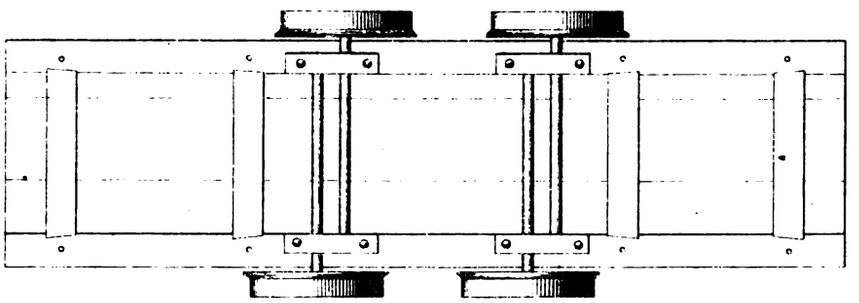

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Fig. 285.

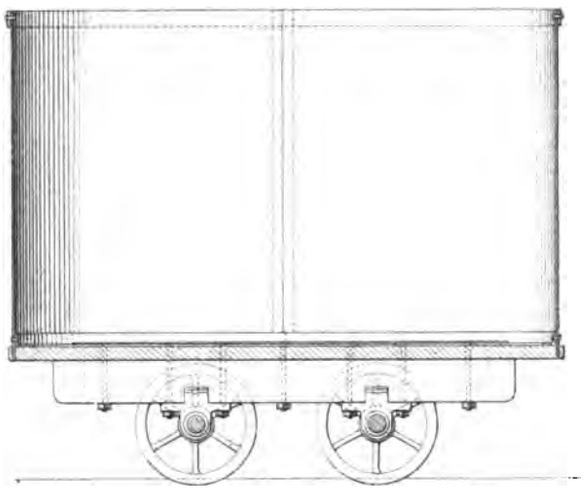


Fig. 284.

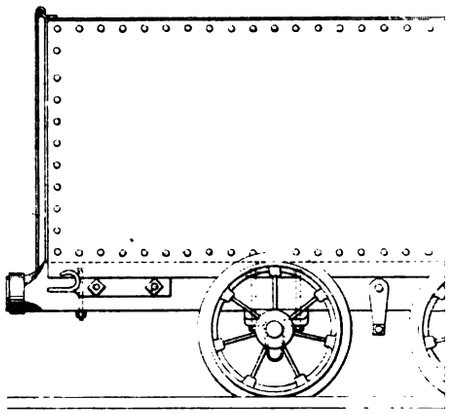
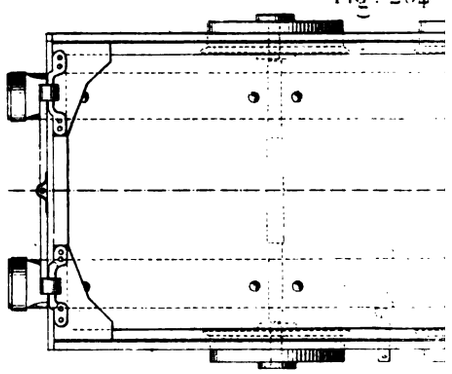


Fig. 284



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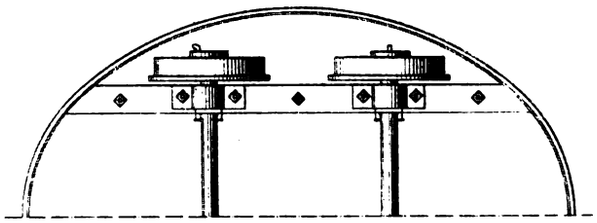


Fig. 285 B

Fig. 285 D

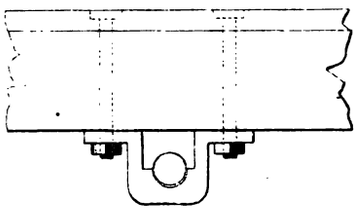


Fig. 285 A

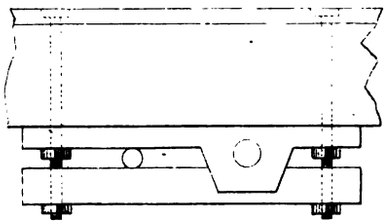
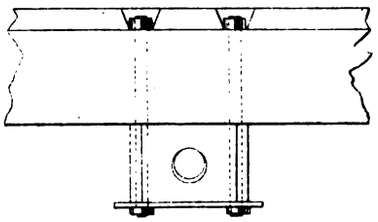


Fig. 285 C



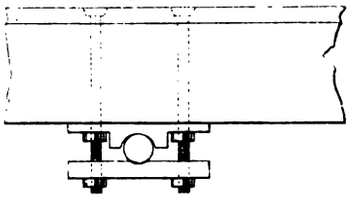


Fig. 286.

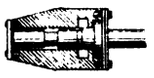
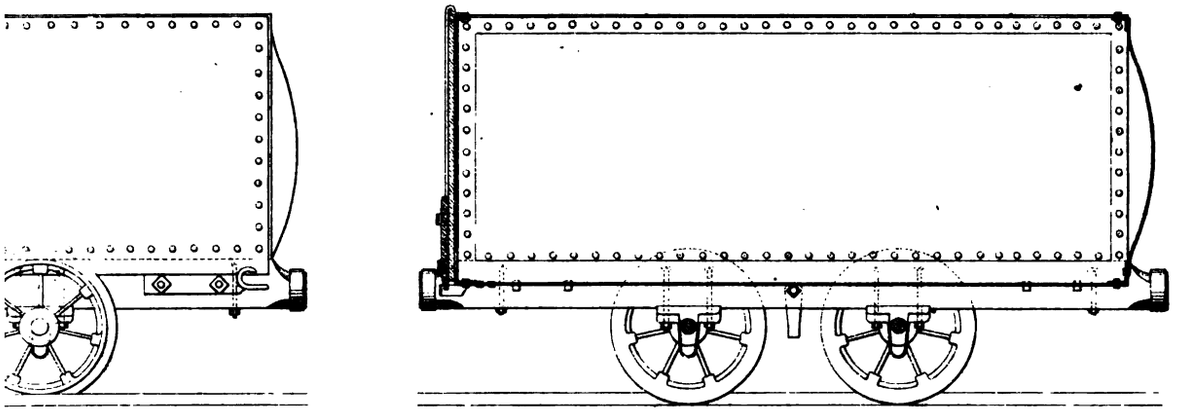


Fig. 2

Fig. 284.



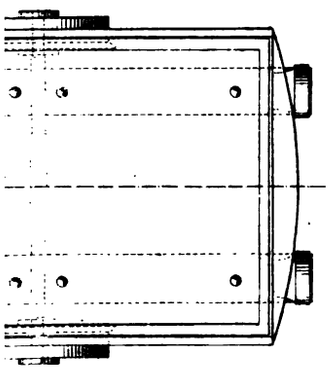


Fig. 284

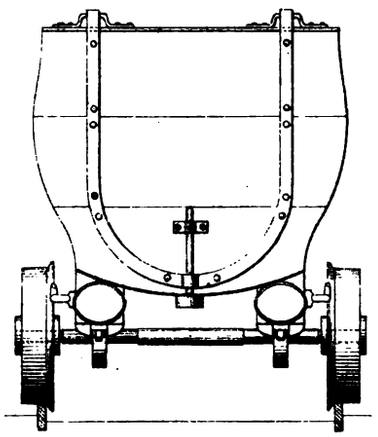
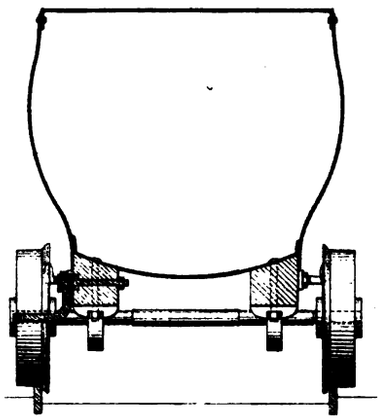


Fig. 284



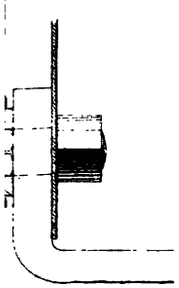


Fig. 288 A

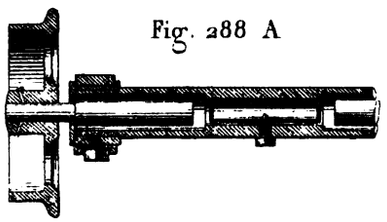
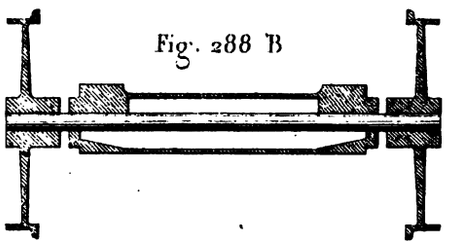


Fig. 288 B



Echelle des Fig. 283 et 284 de 0m 05 pour 1 mètre.

100 50 0 1 mètre.

Echelle des Fig. 285 à 288 de 0m 10 pour 1 mètre.

10 5 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1 mètre.

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Fig. 289.

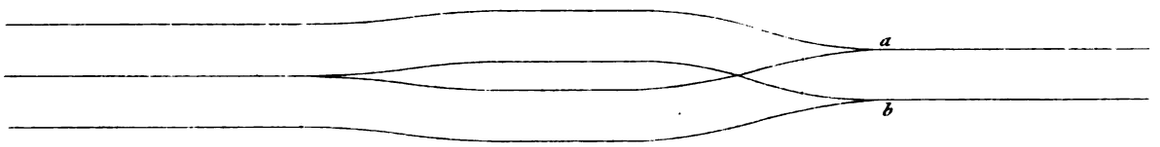


Fig. 292.

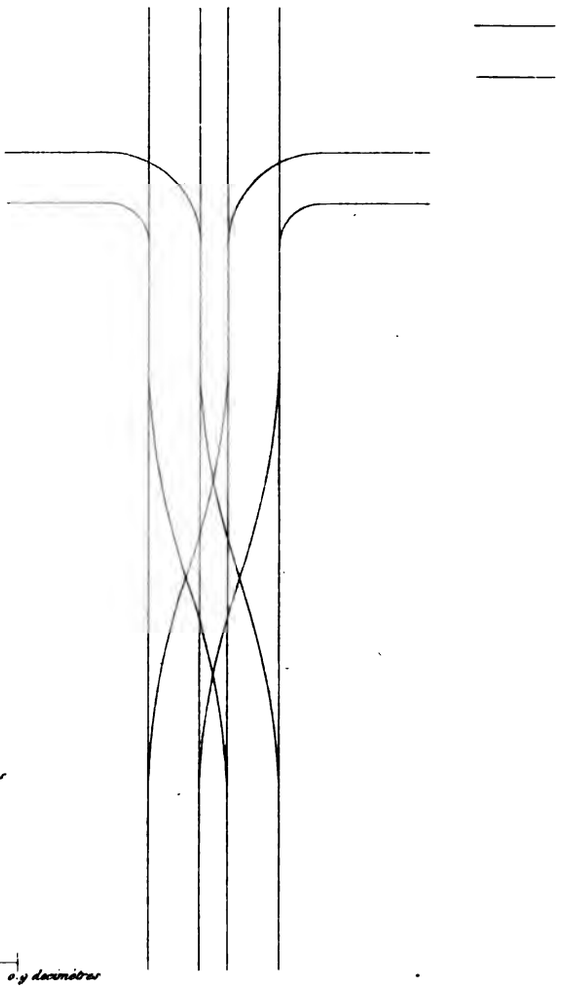
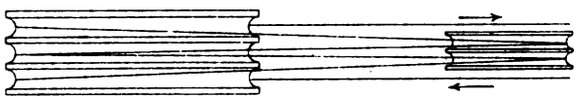


Fig. 291.



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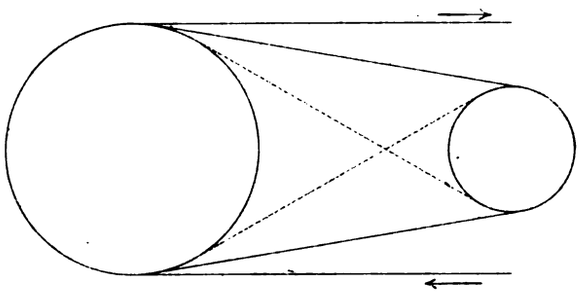
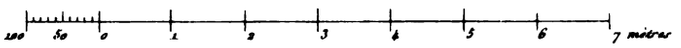
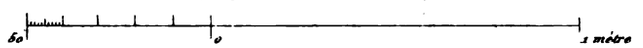


Echelle des Fig. 289 et 292 à 294 de 0m. 01 pour 1 mètre



Echelle des Fig 290 et 295 de 0m. 05 pour 1 mètre



Echelle de la Fig. 290 détail de 0m. 10 pour 1 mètre

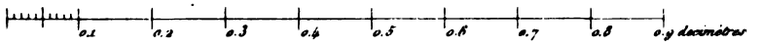


Fig. 290

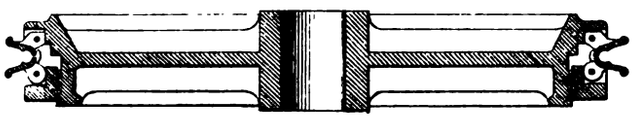


Fig. 290.

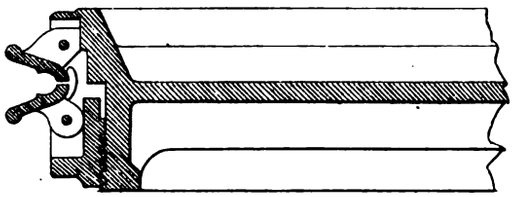


Fig. 293.

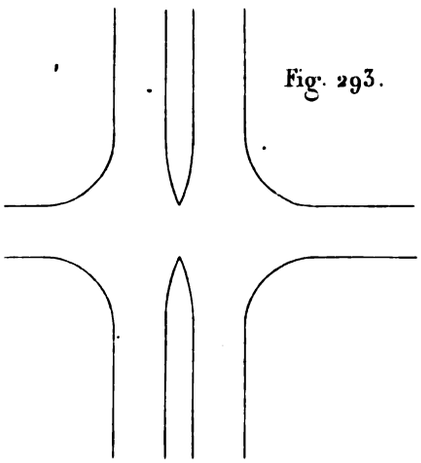


Fig. 294.

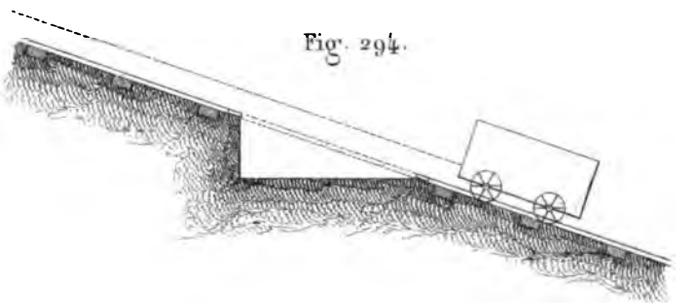


Fig. 295.

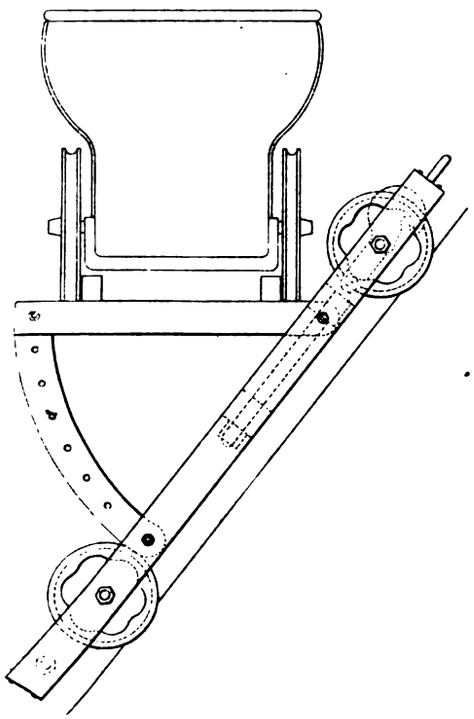


Fig. 295.

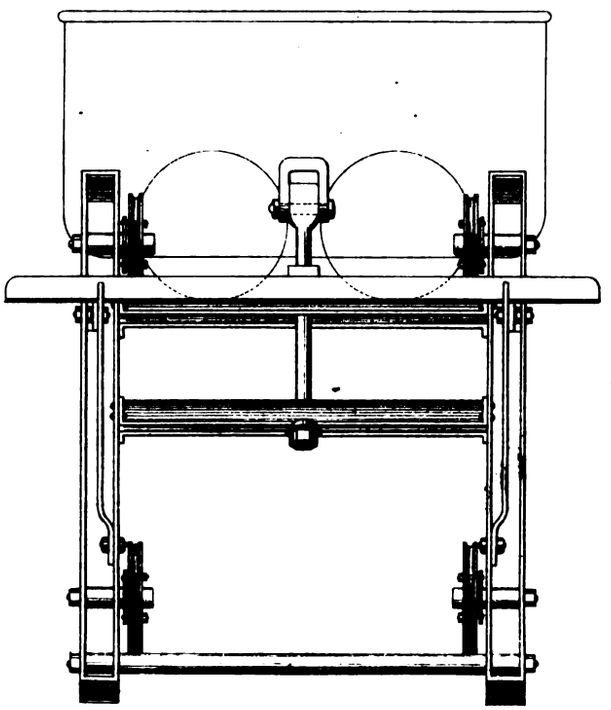


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Fig. 296.

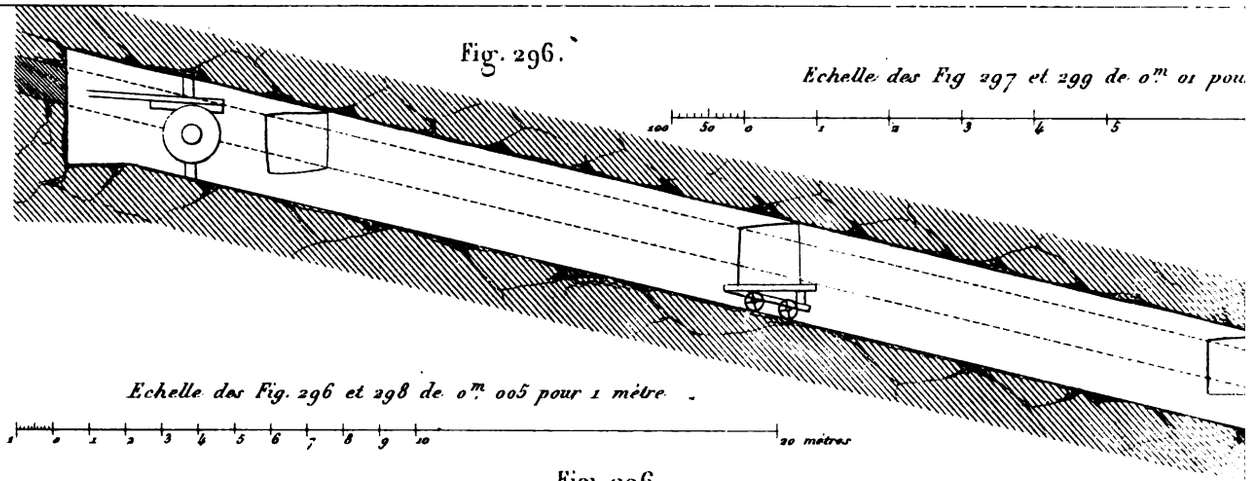

Fig. 296.

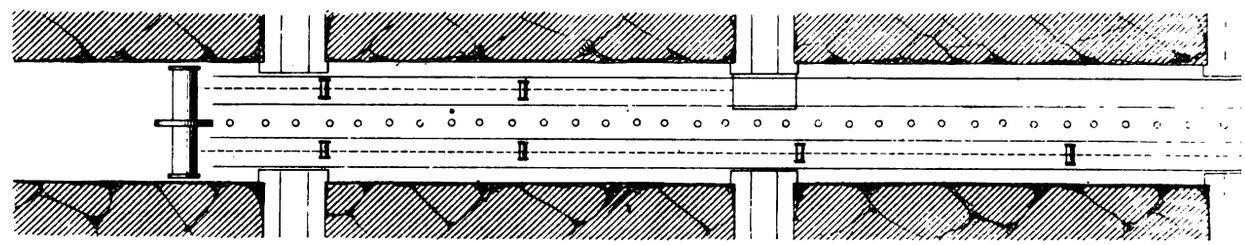

Fig. 298.

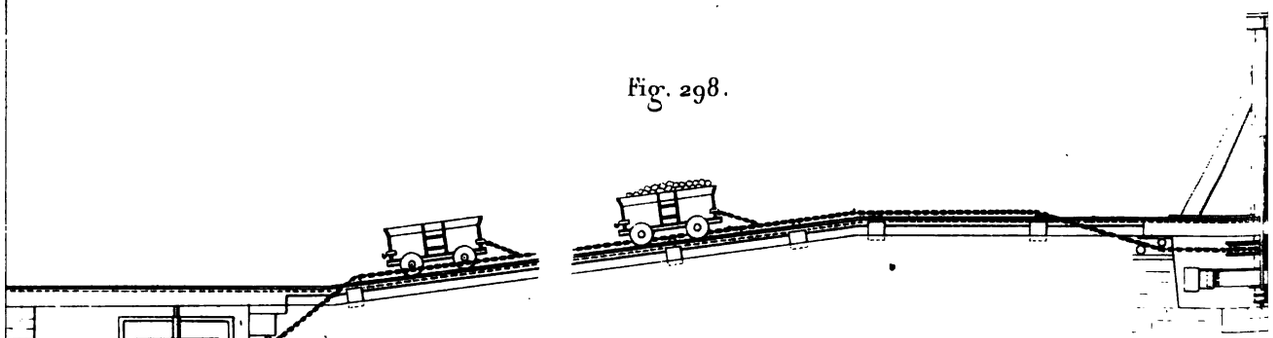

Fig. 298.

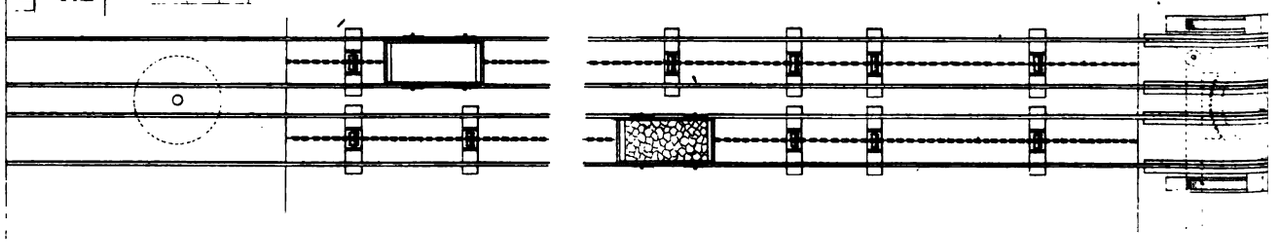

Fig. 297 A

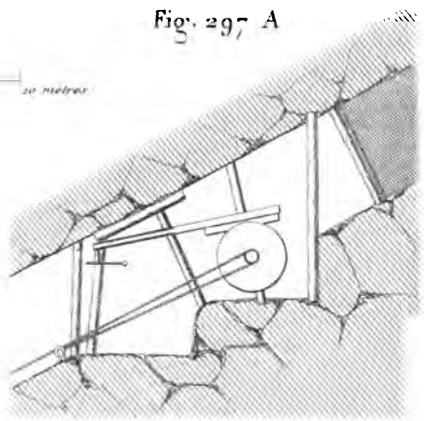

Fig. 297 B

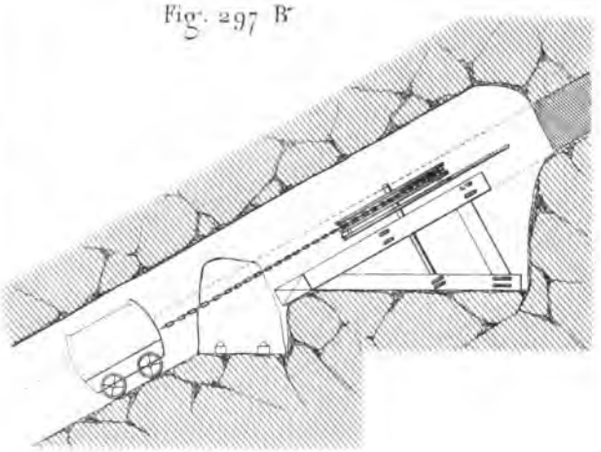

Fig. 297 A'

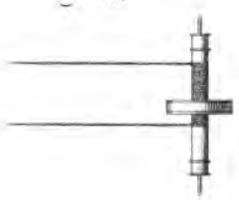

Fig. 299.

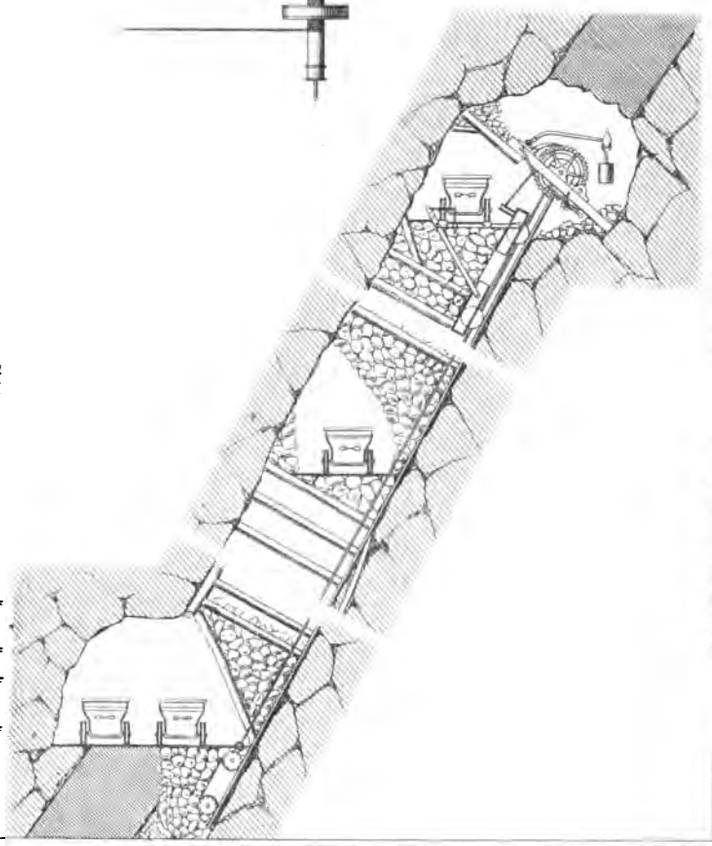

Fig. 299.

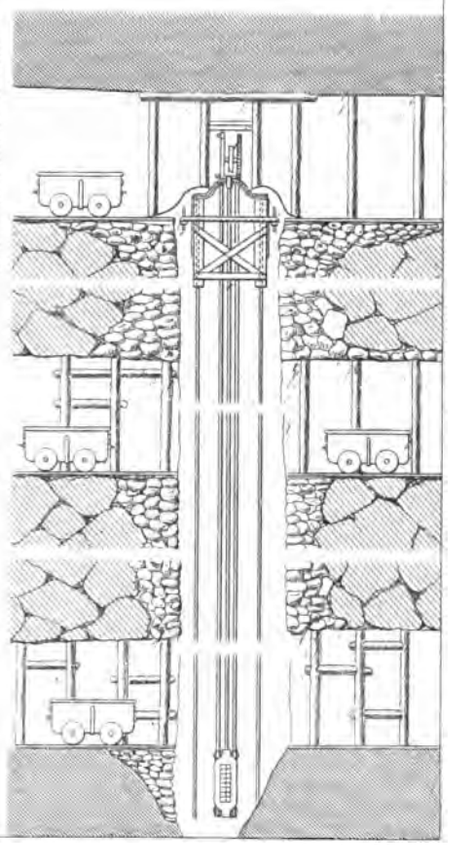

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Fig. 300.

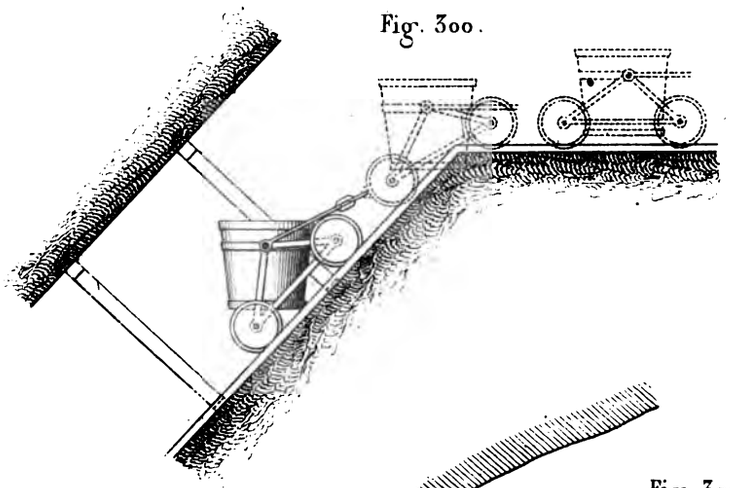


Fig. 301.

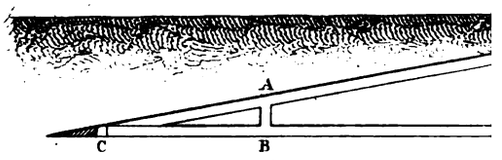


Fig. 302 B.

Fig. 302 A

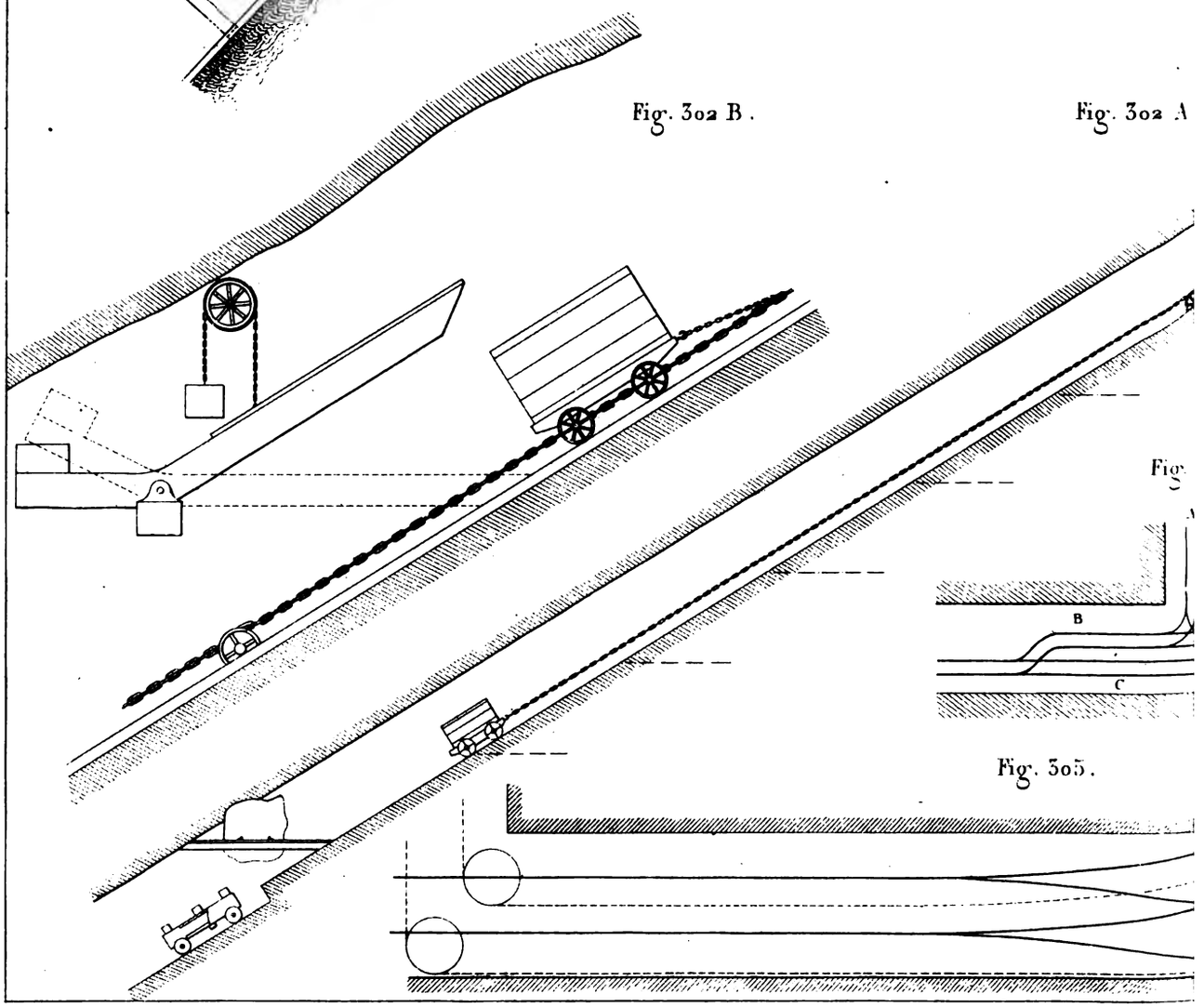


Fig. 303.

Fig. 305.

Fig. 303.

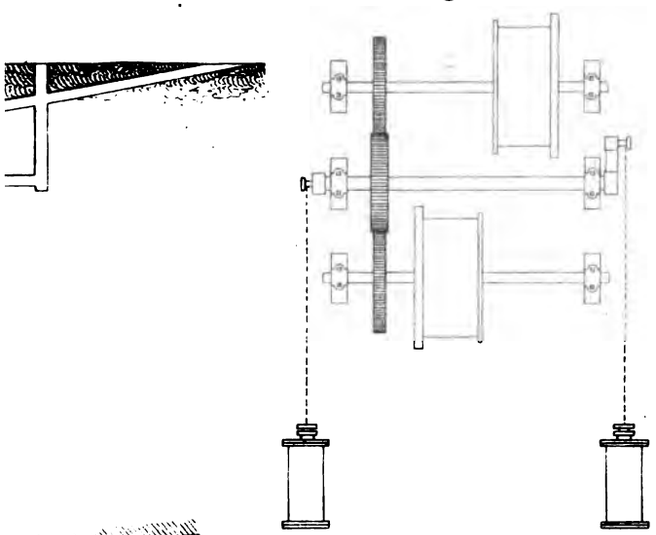


Fig. 304 A.

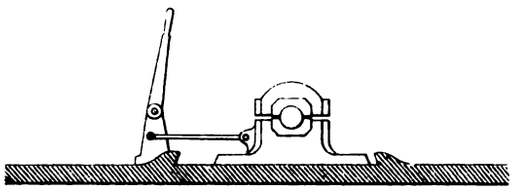


Fig. 304 B.

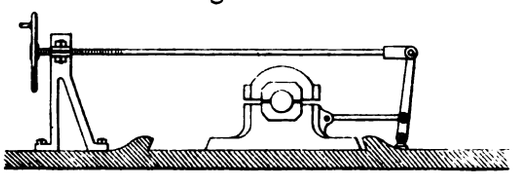


Fig. 306 A.

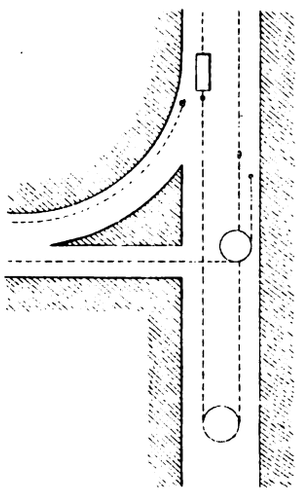


Fig. 306 B.

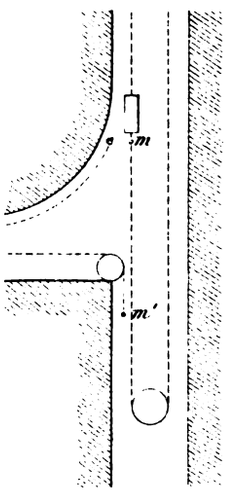
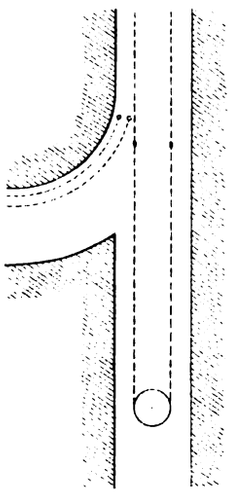
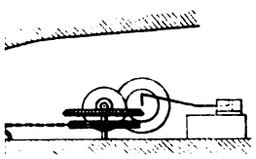
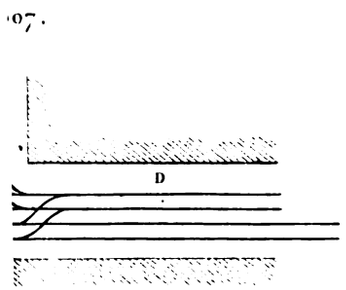
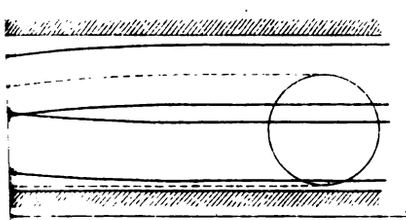


Fig. 306 C.

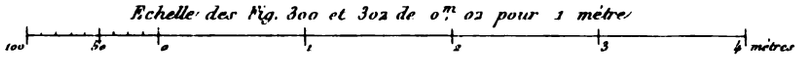




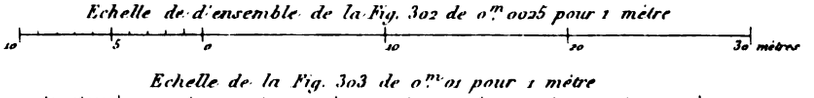




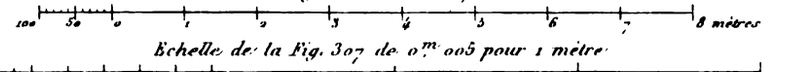
Echelle des Fig. 300 et 302 de $0^{m}.02$ pour 1 mètre



Echelle de d'ensemble de la Fig. 302 de $0^{m}.0025$ pour 1 mètre



Echelle de la Fig. 303 de $0^{m}.01$ pour 1 mètre



Echelle de la Fig. 307 de $0^{m}.005$ pour 1 mètre

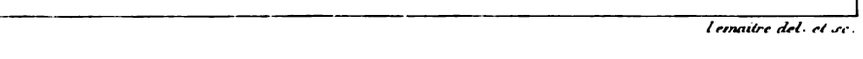
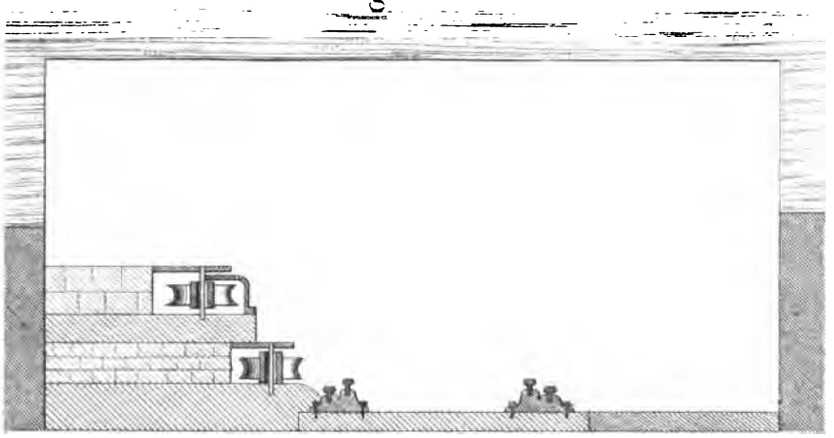


Fig. 308.



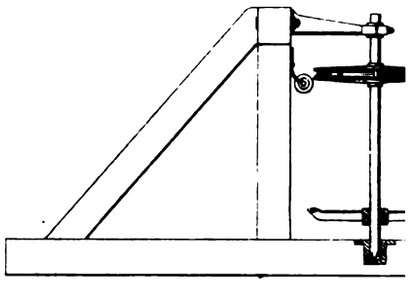
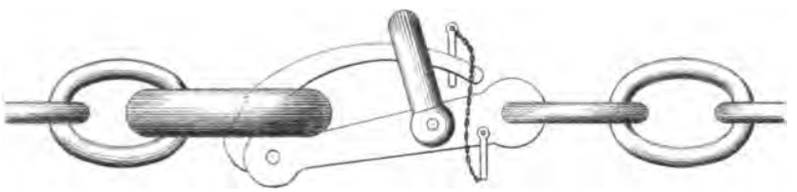
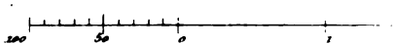


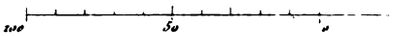
Fig. 309.



Echelle de la Fig. 308 de o^m .



Echelle de la Fig. 310 de o^m



Echelle de la Fig. 312 de o^m .01

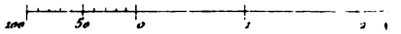


Fig. 310.

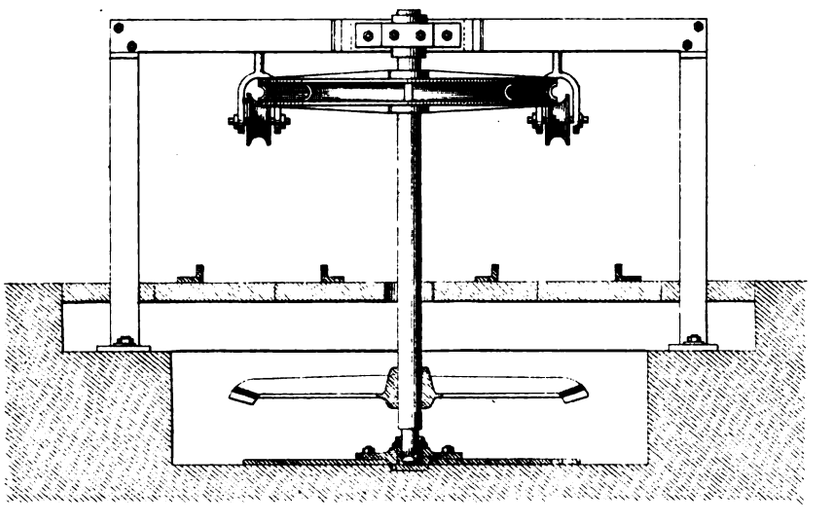


Fig. 312.

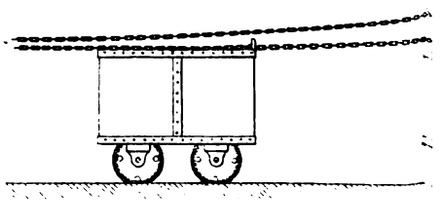


Fig. 311.

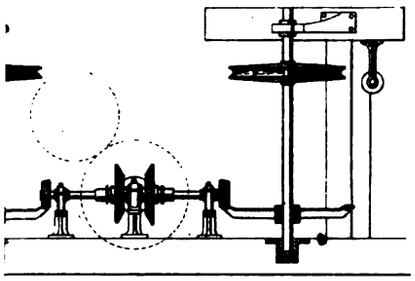


Fig. 313.

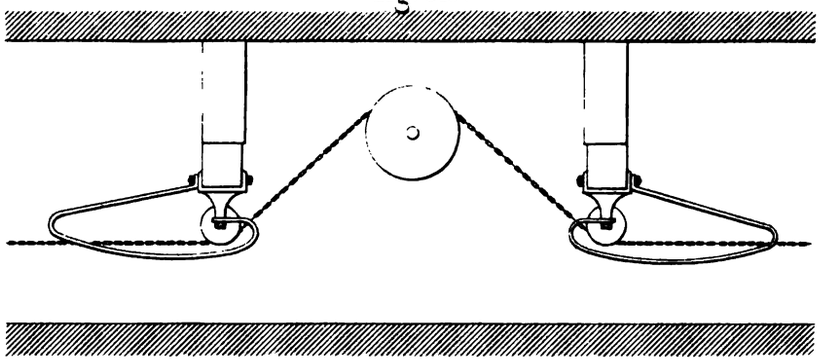


Fig. 314.

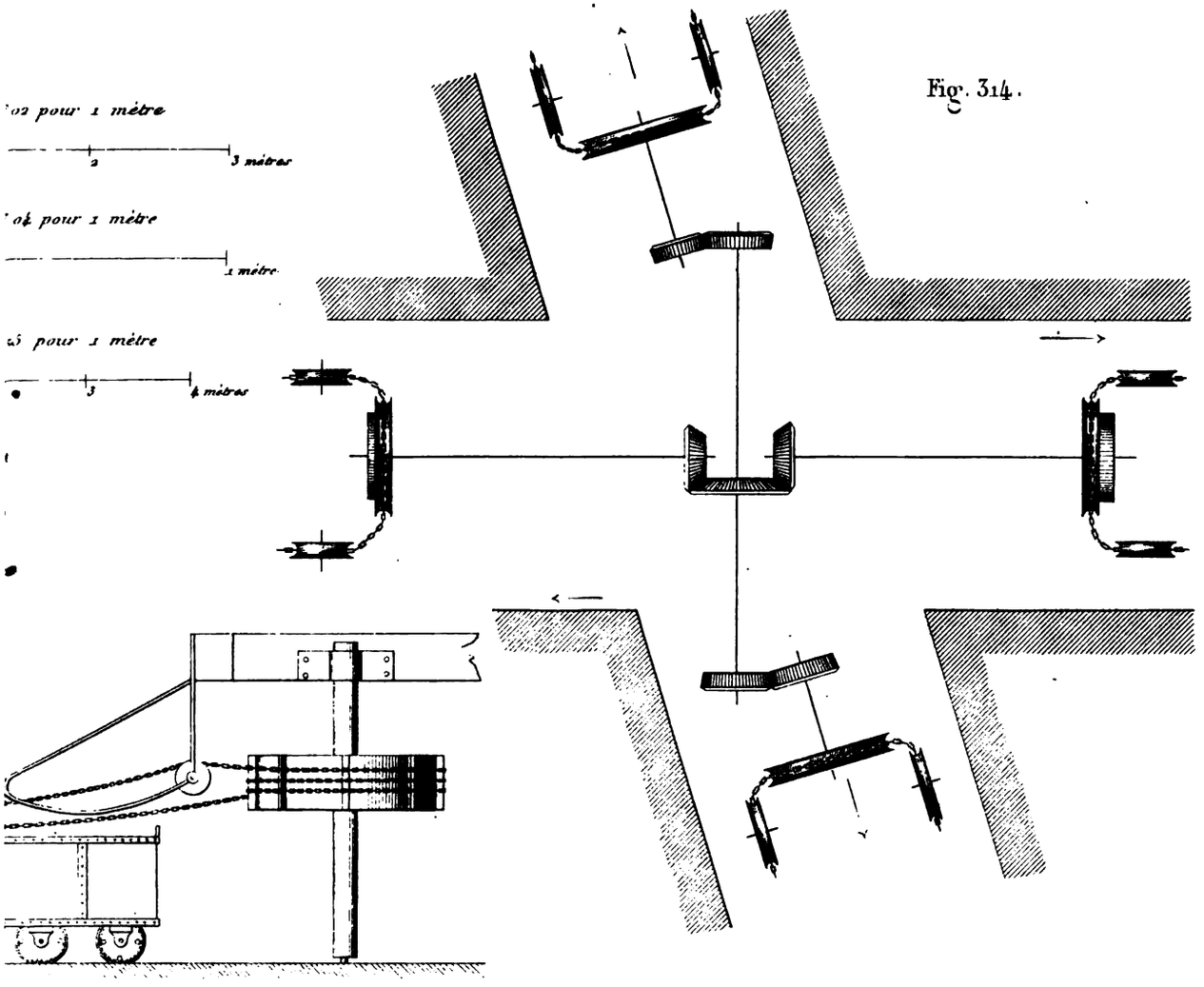


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Fig. 315.

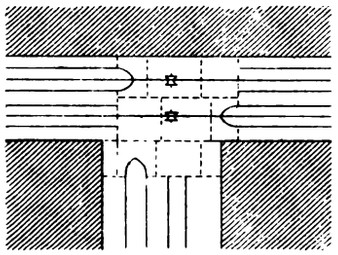


Fig. 316.

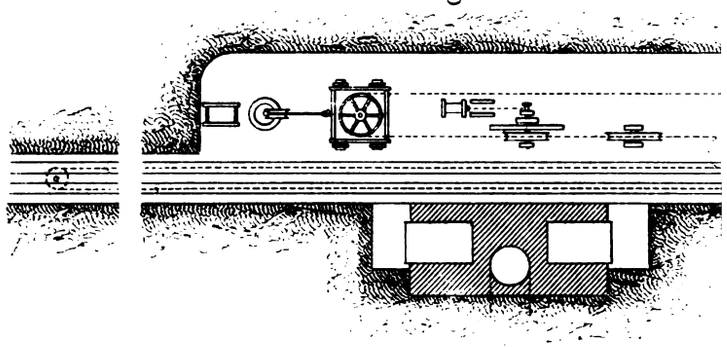


Fig. 317.

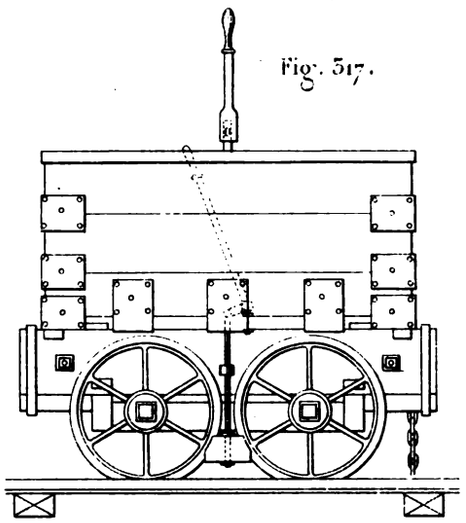


Fig. 317.

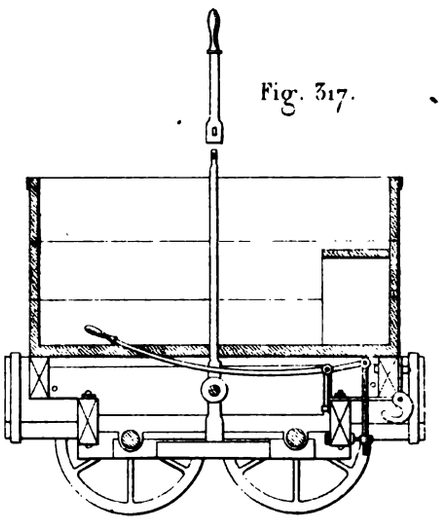


Fig. 317.

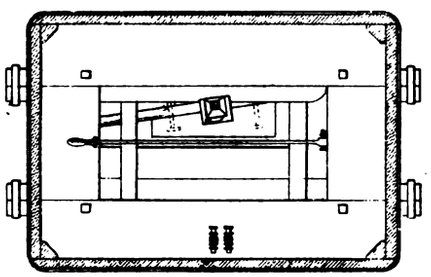
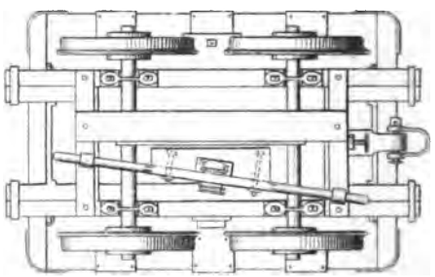


Fig. 317.



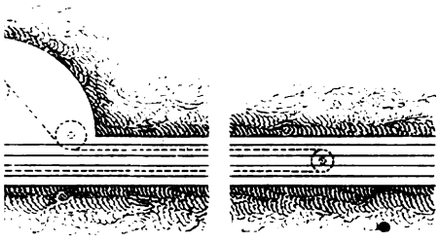


Fig. 317.

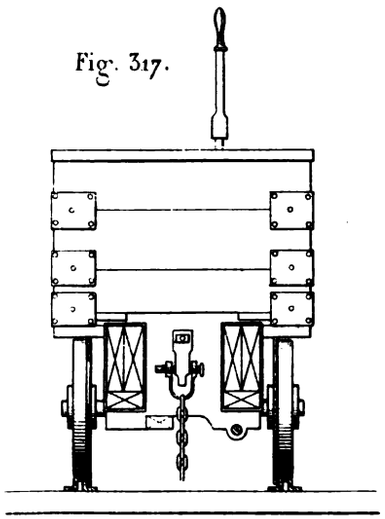


Fig. 318.

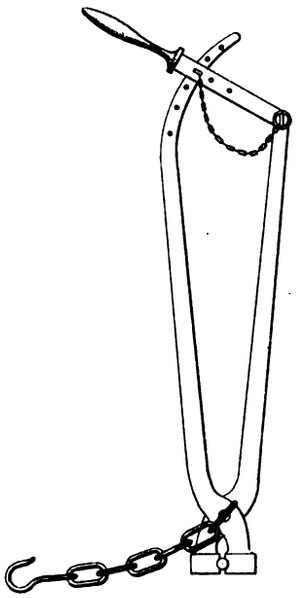


Fig. 318.

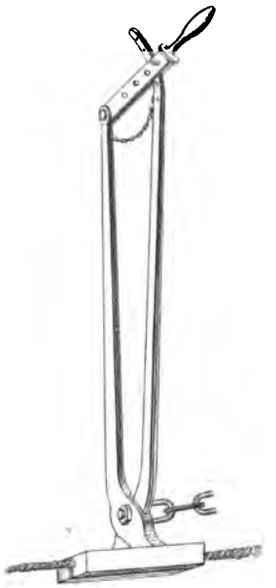


Fig. 318.

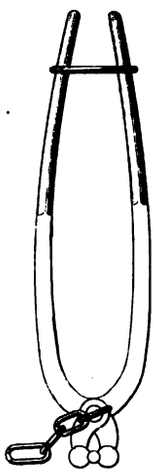
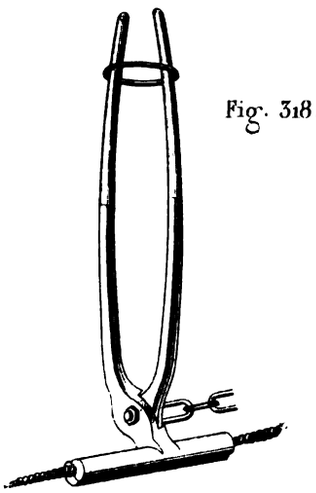


Fig. 318.



Echelle des Fig. 315 et 316 de o.m 005 pour 1 mètre

Echelle de la Fig. 317 de o.m 05 pour 1 mètre

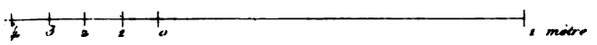


Fig. 319.

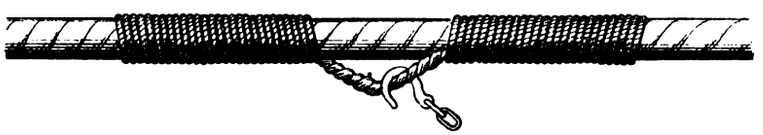


Fig. 520.

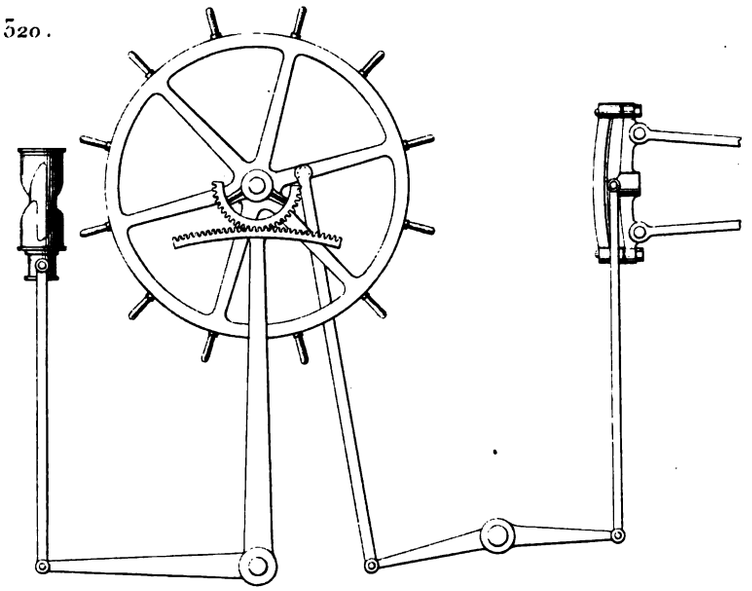


Fig. 521.

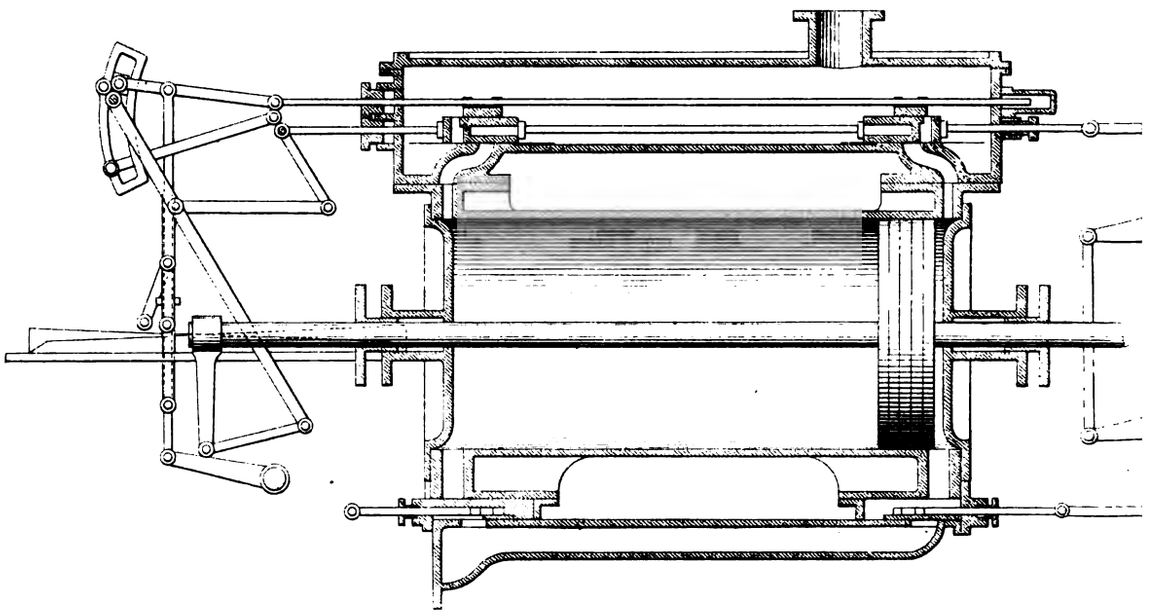
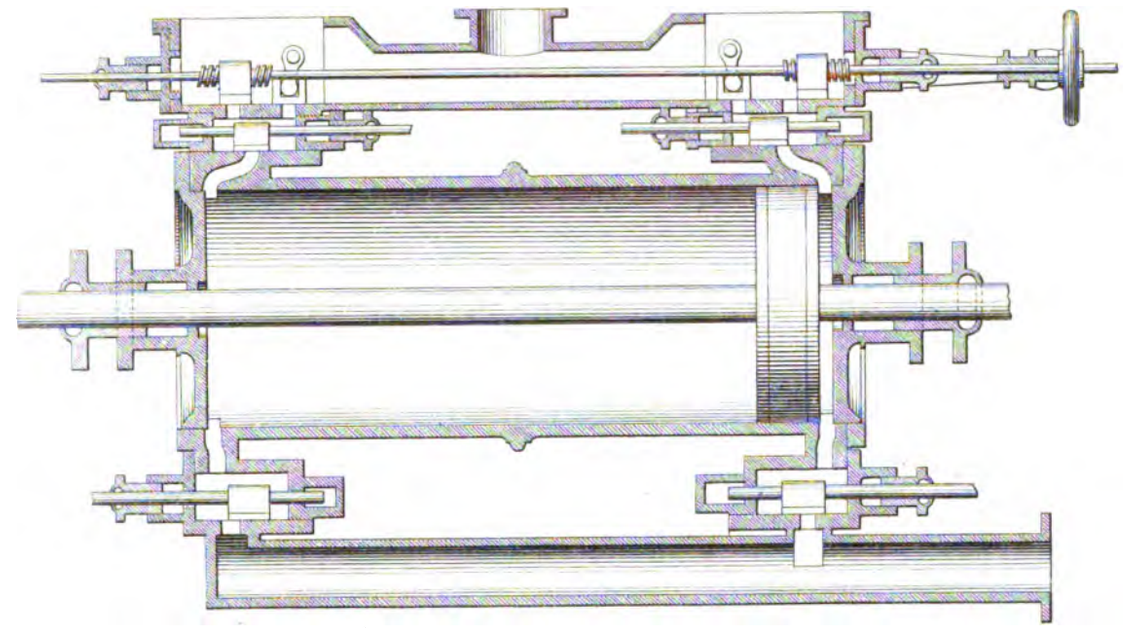
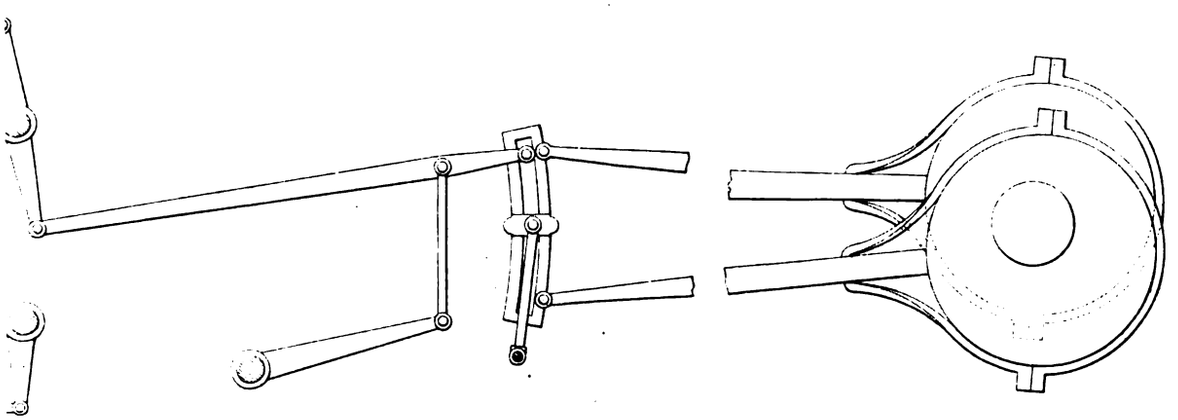


Fig. 322.





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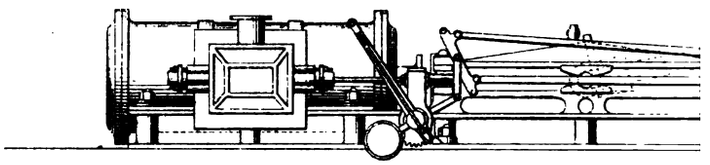
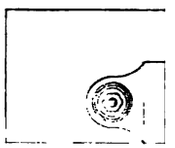
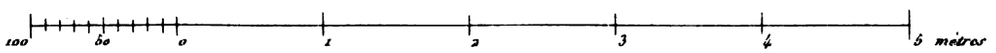
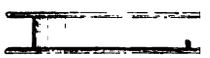
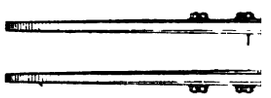


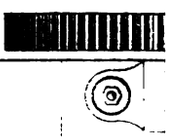


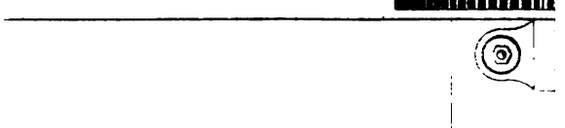
Echelle de $0^{m}.02$ pour 1 mètre

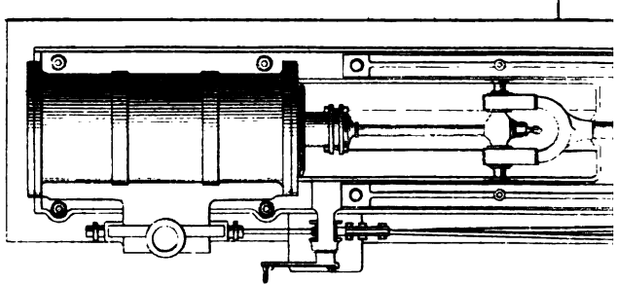












p. 324.

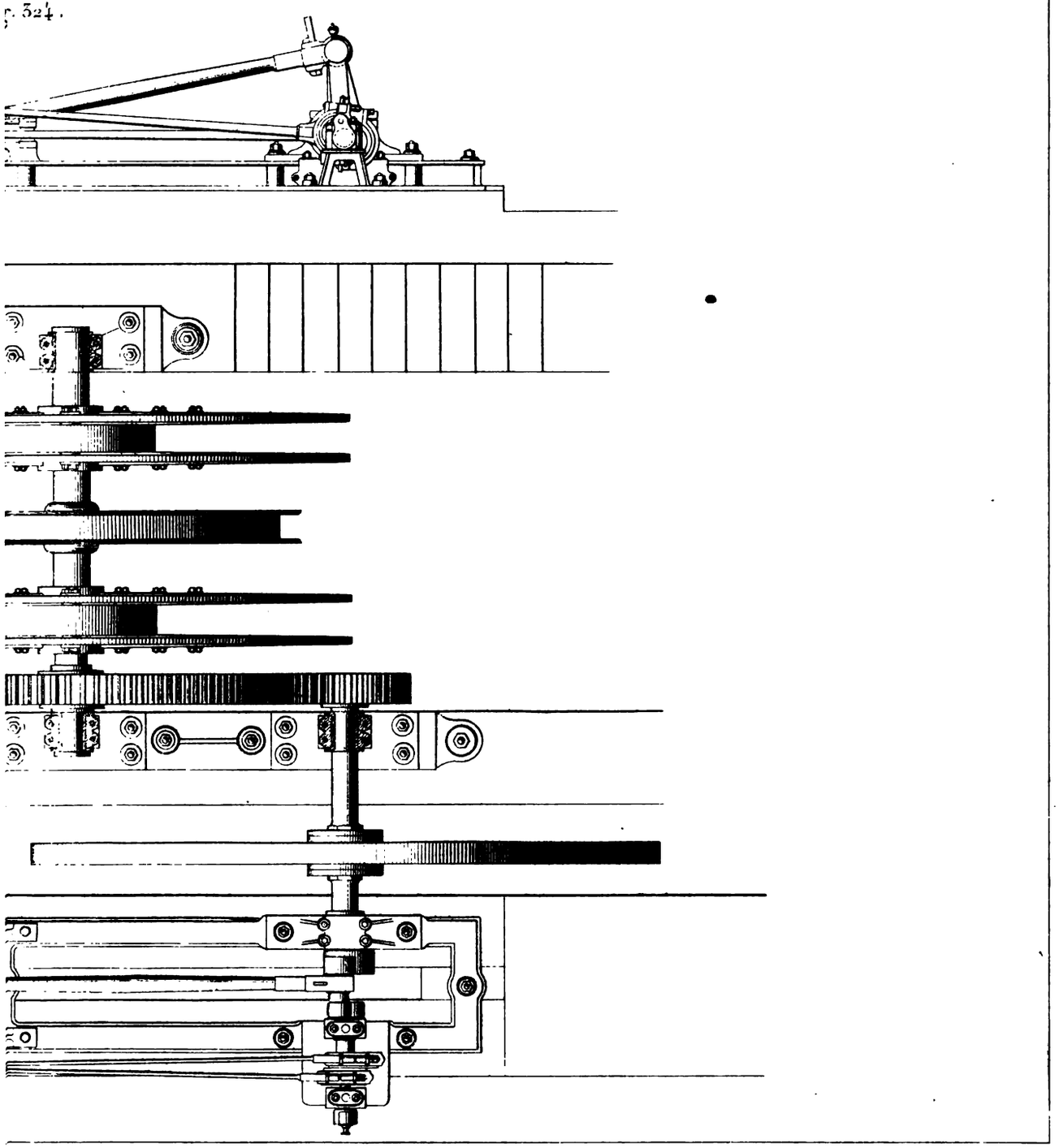


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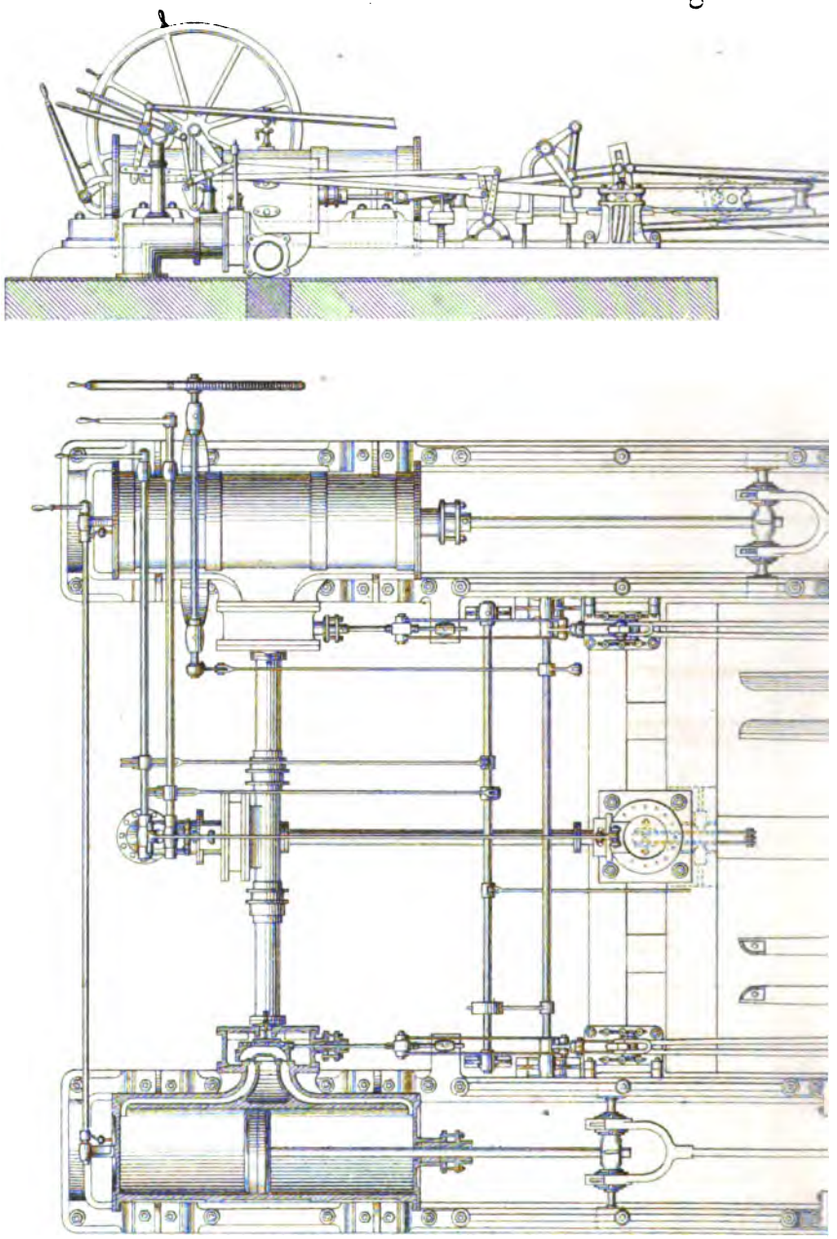
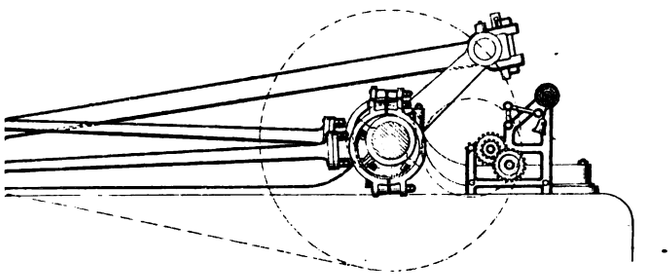
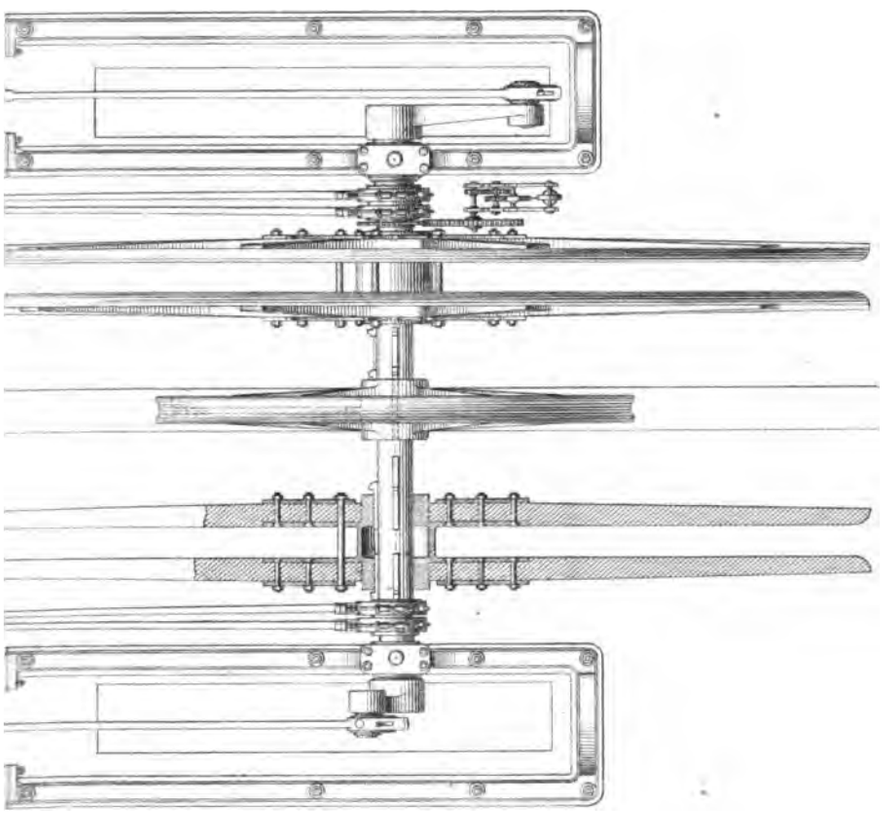
Fig. 325.







0m.02 pour 1 mètre

1/4 1/5 10 mètres

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Fig. 326.

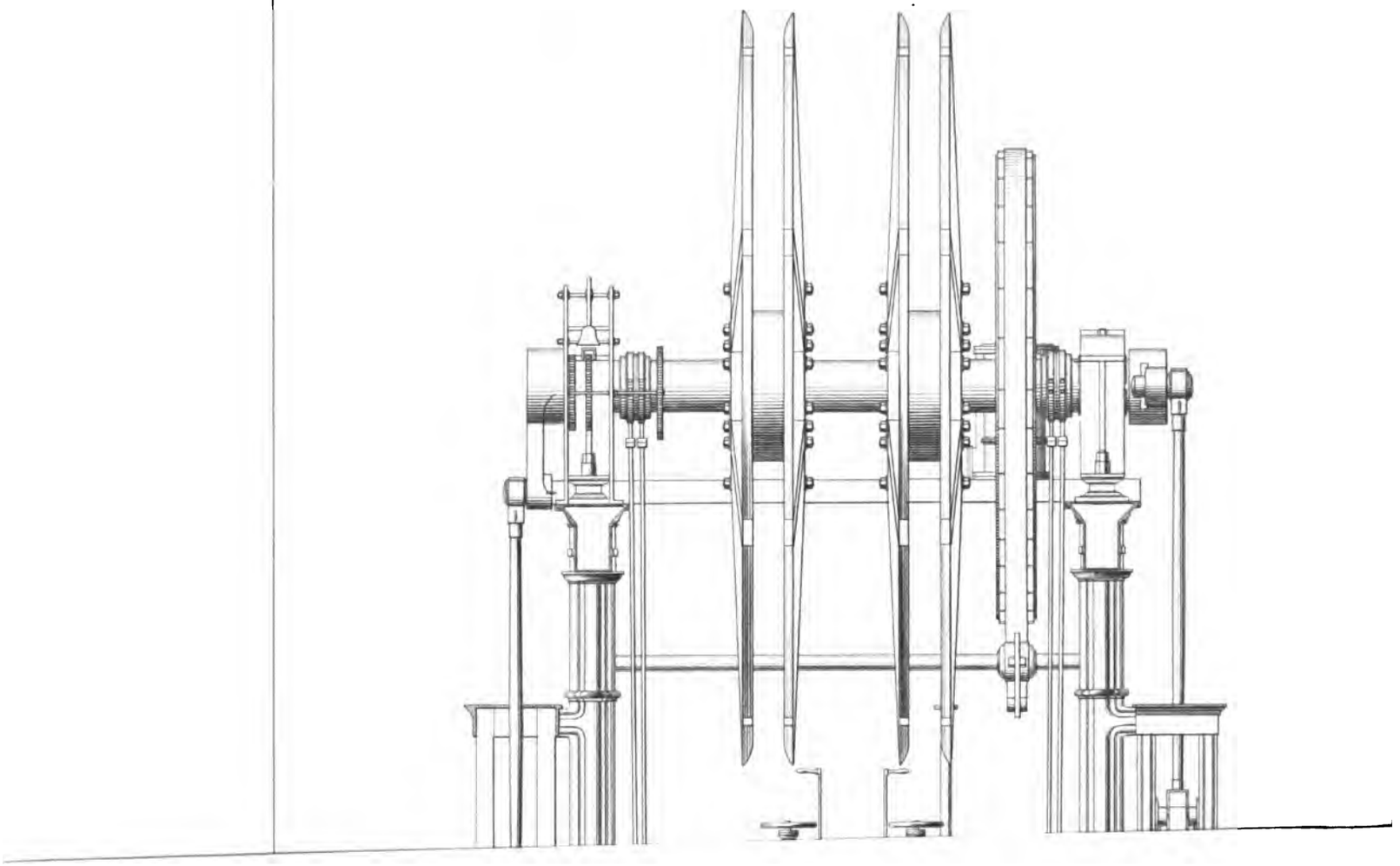


Fig. 326.

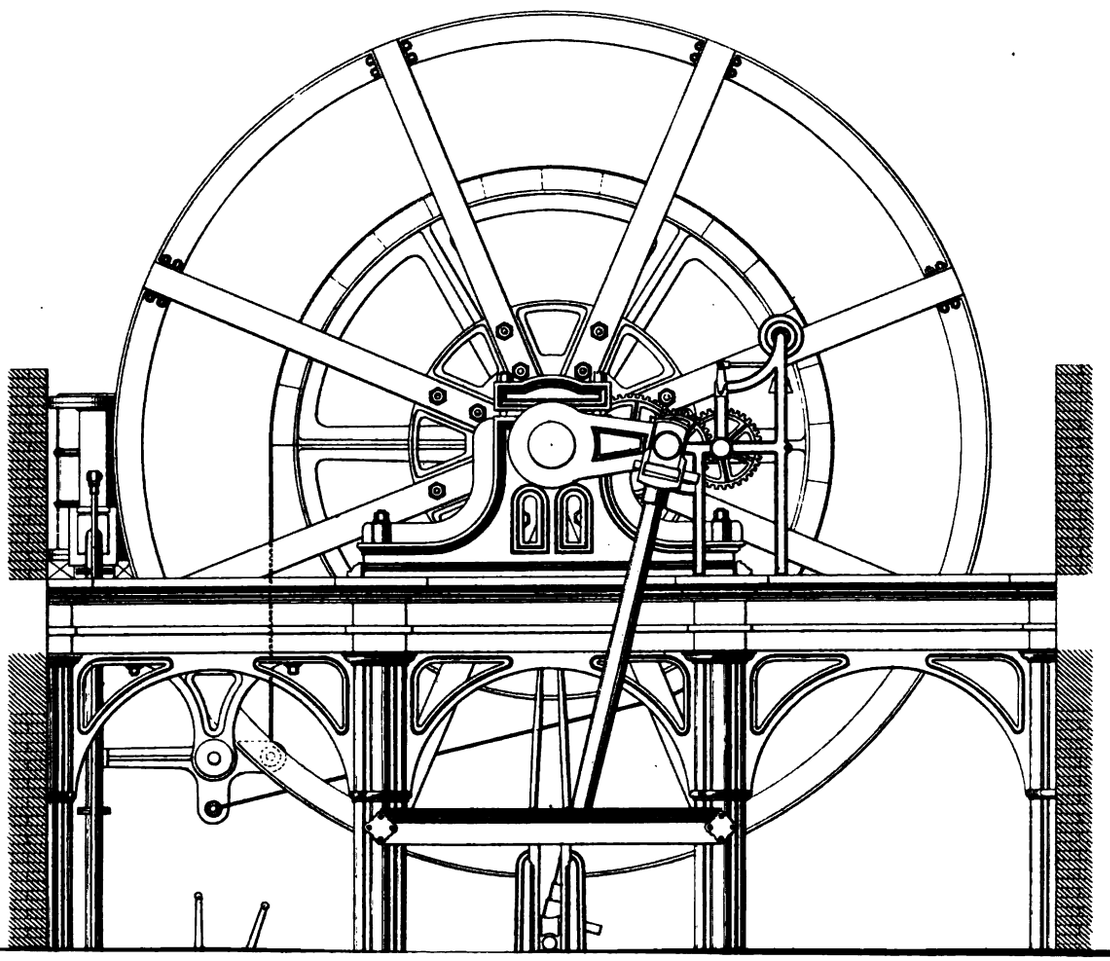


Fig. 327.

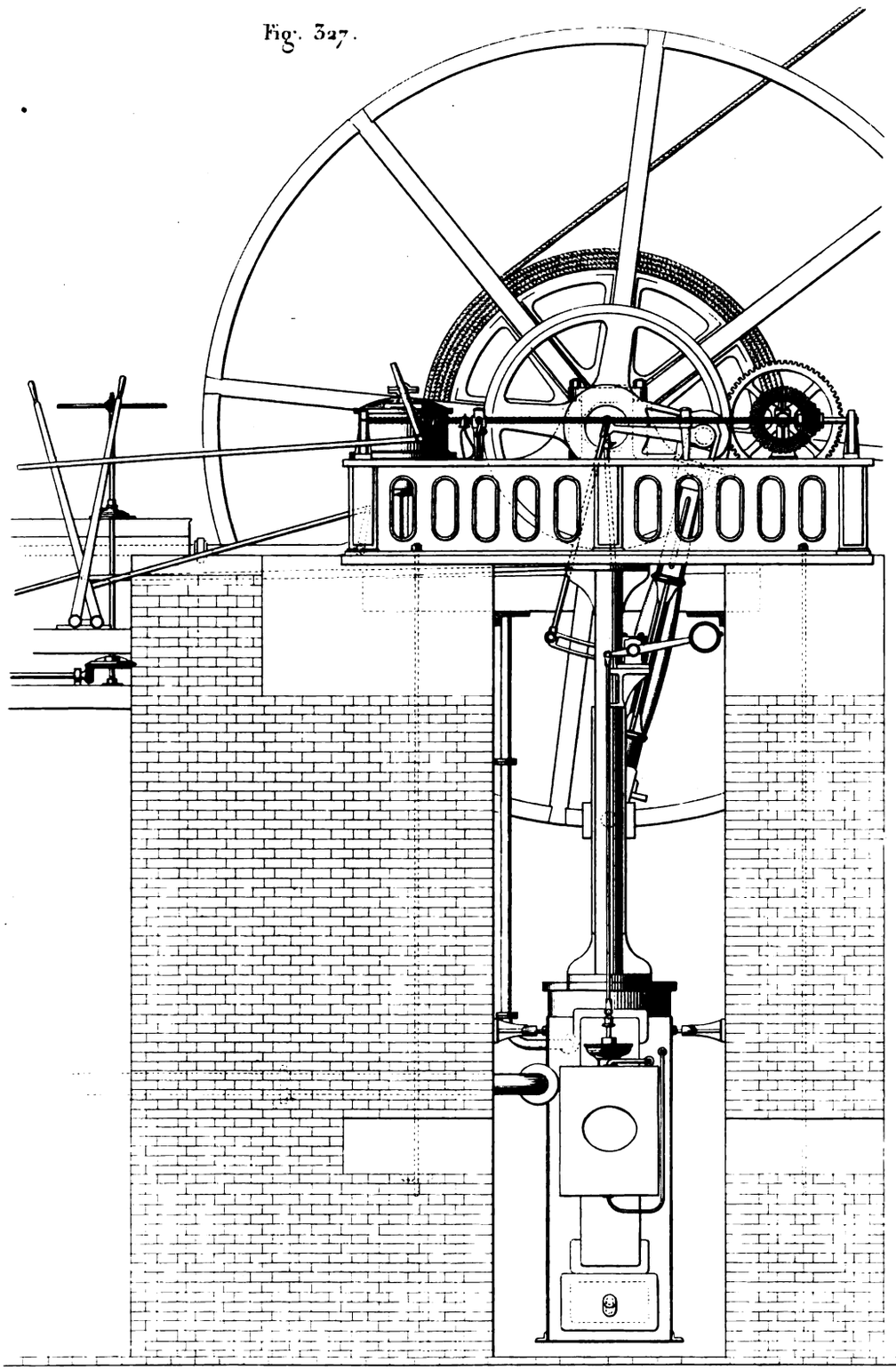
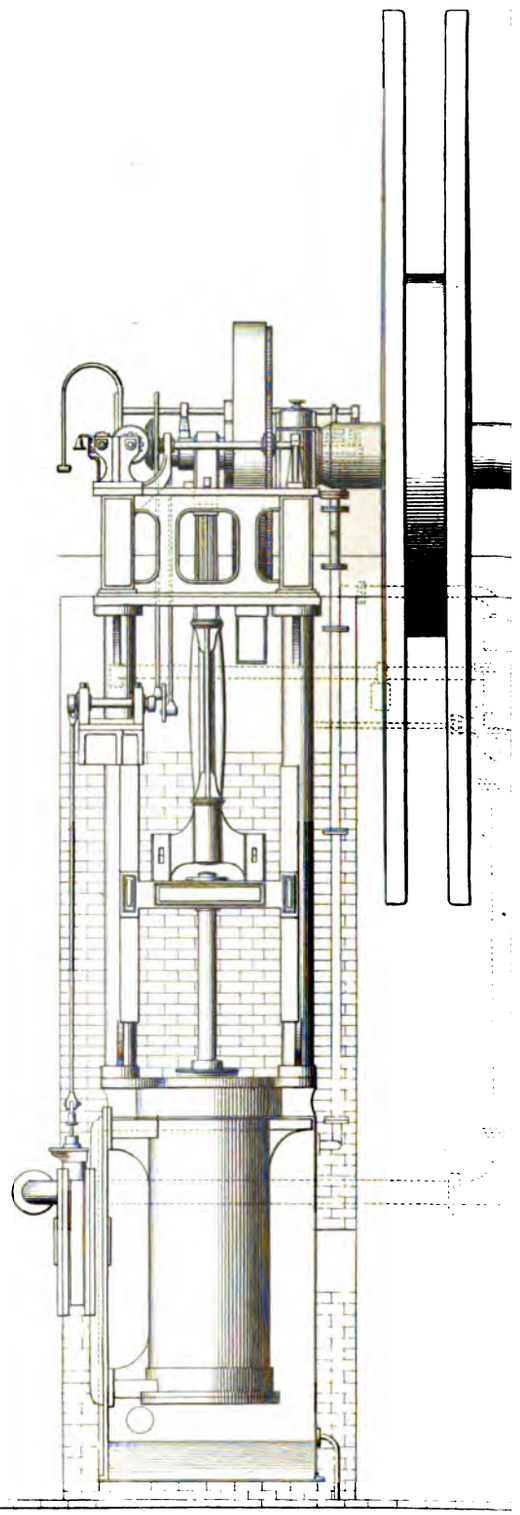
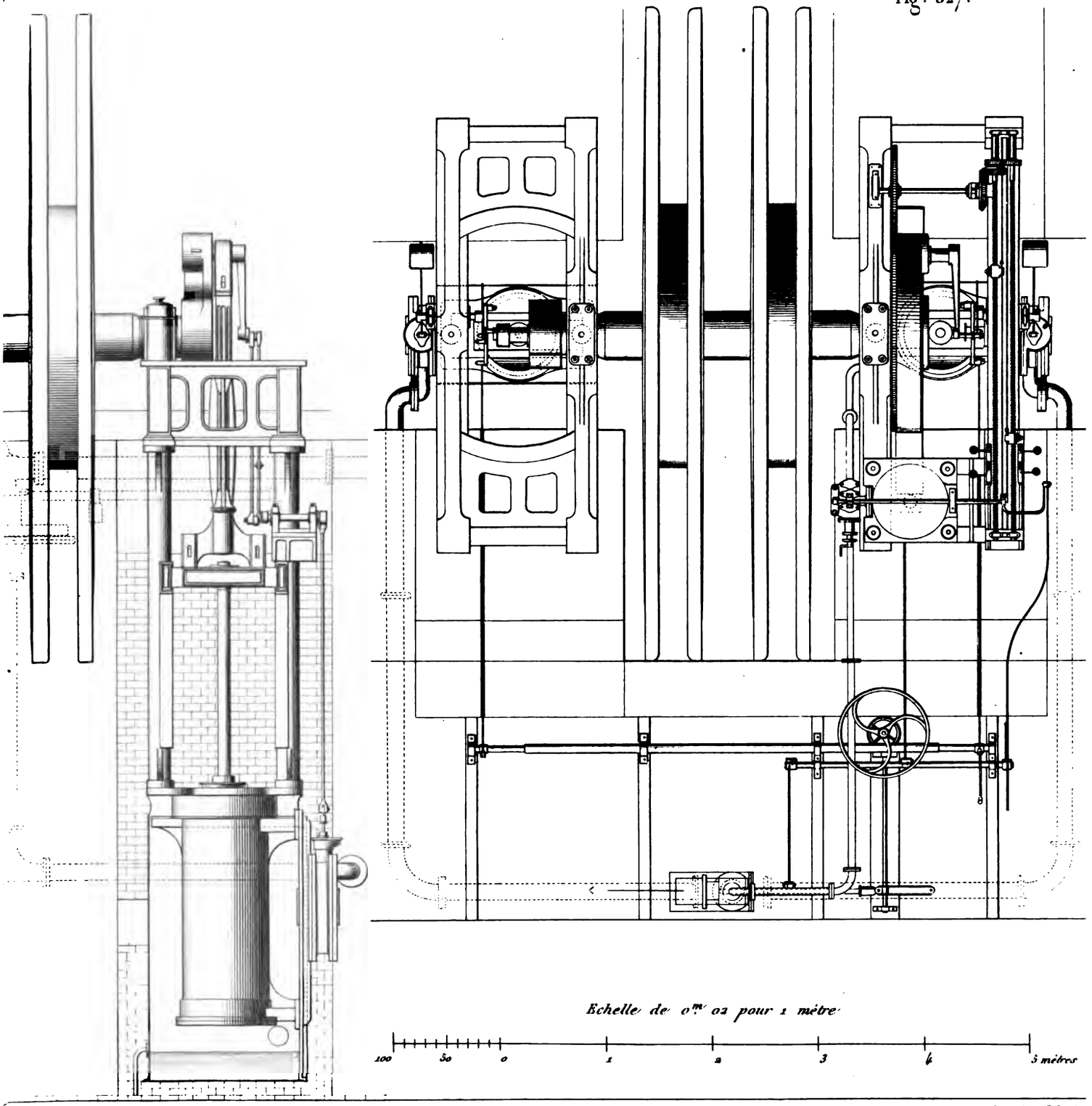


Fig. 32



327.

Fig. 327.



Lemaître del. et s

Fig. 328.

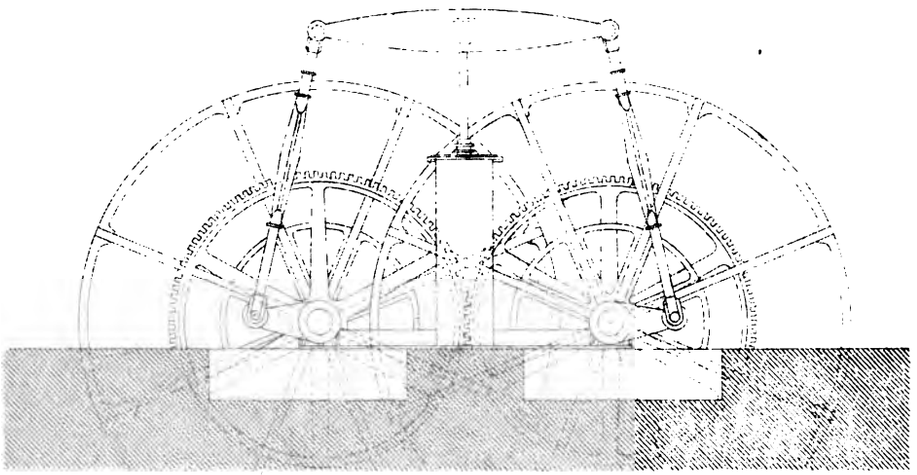
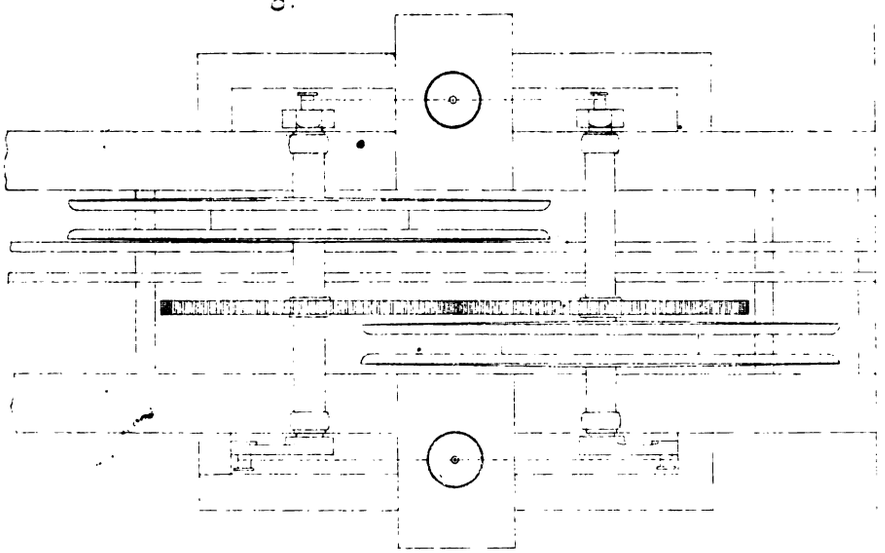
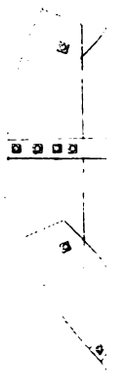


Fig. 328.





Détail A

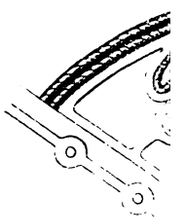
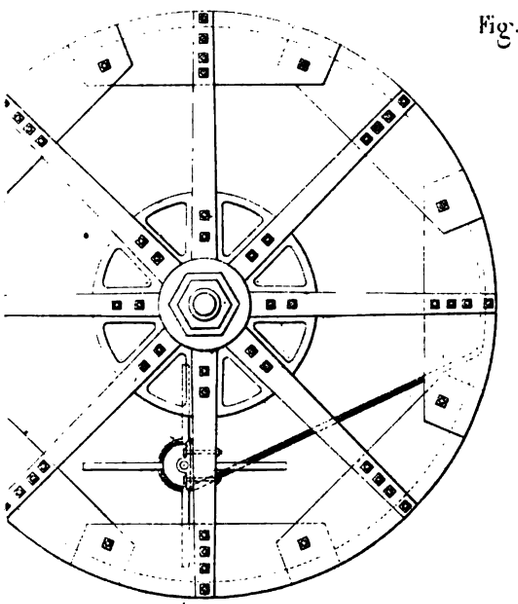


Fig. 329.



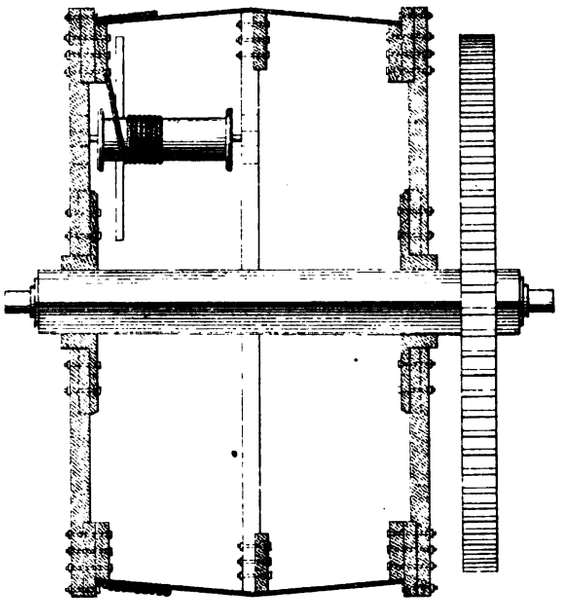
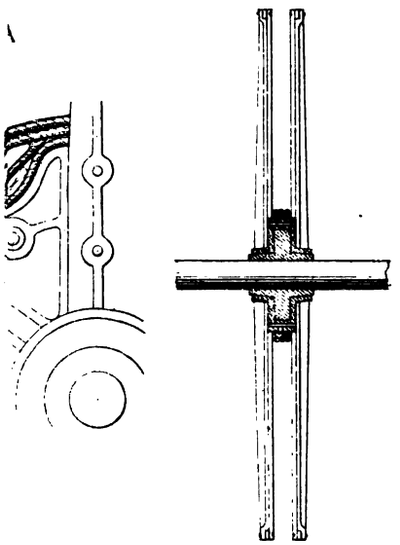
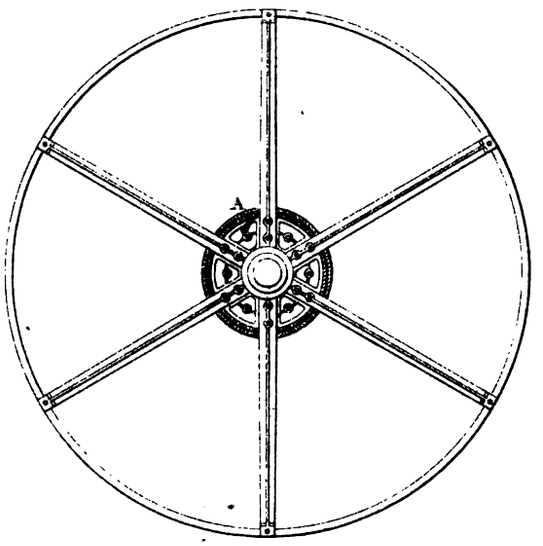


Fig. 330.





Echelle de la Fig. 328 de 0^{m} 01 pour 1 metre

100 50 0 1 2 3 4 5 6 7 8 9 10 mètres

Echelle des Fig. 329 et 330 de 0^{m} 02 pour 1 mètre

100 50 0 1 2 3 4 5 mètres

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Fig. 331.

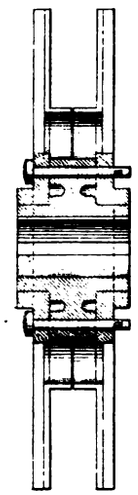
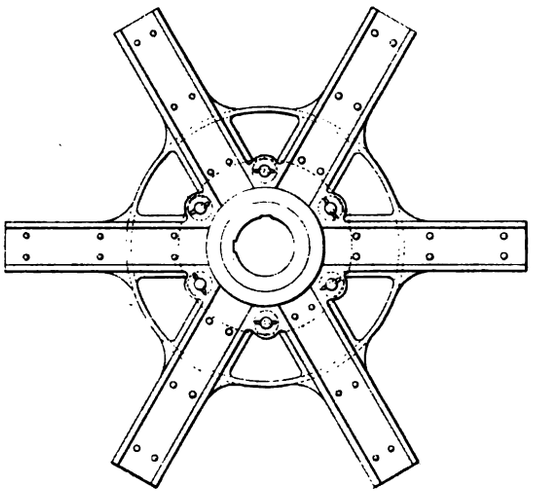


Fig. 331.



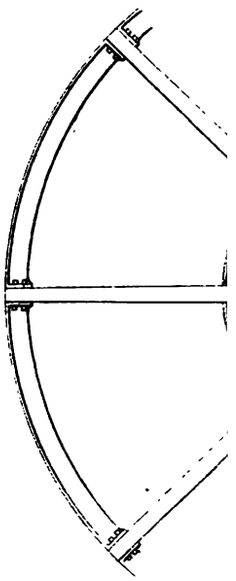


Fig. 333. A.

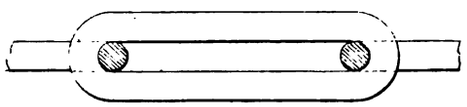


Fig. 333. B

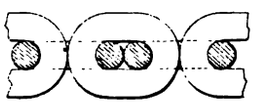
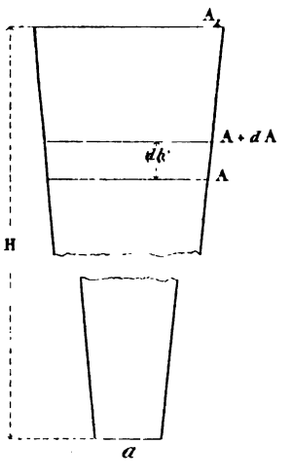
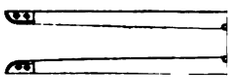


Fig. 334.





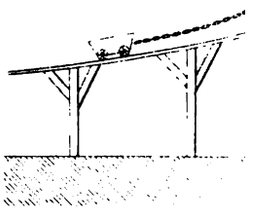
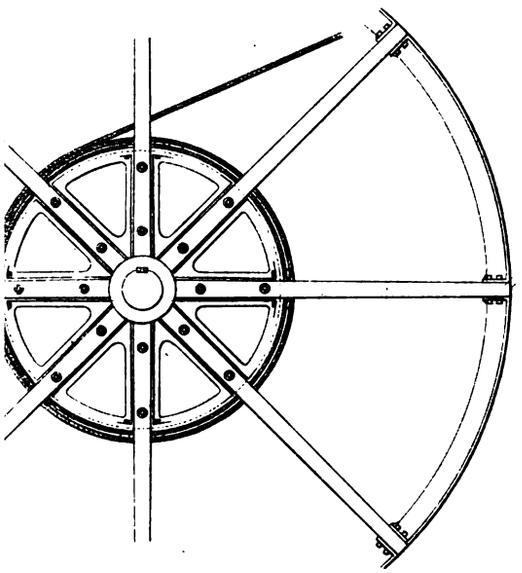


Fig. 332.



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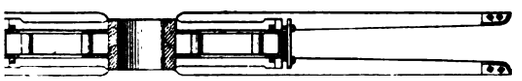


Fig. 336.

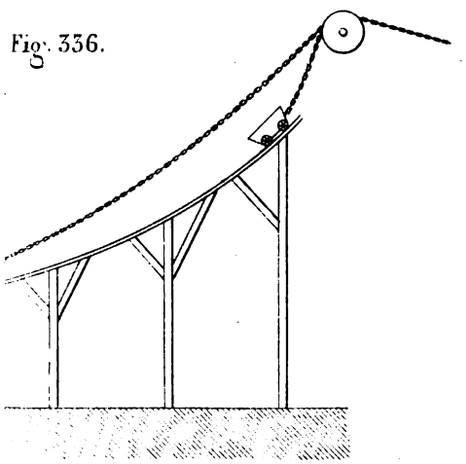


Fig. 335 A.

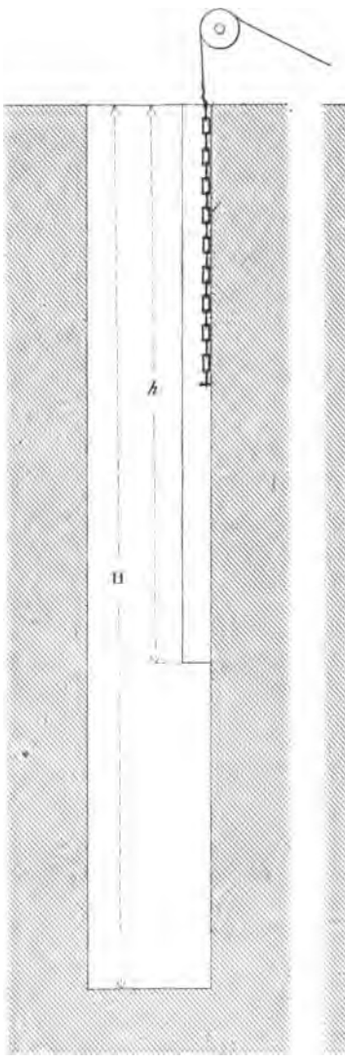
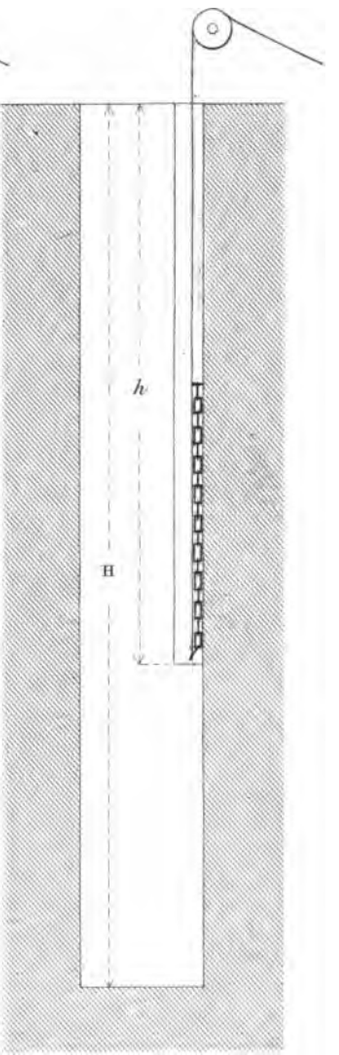


Fig. 335 B.



Echelle des Fig. 331 et 332. de 0^{m} 02 pour 1 mètre.

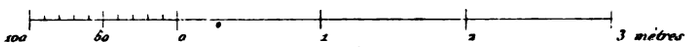
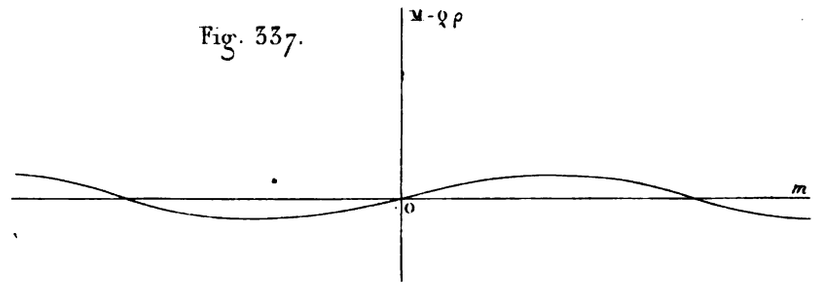


Fig. 337.



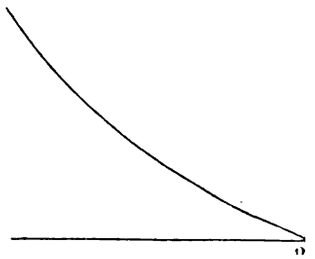


Fig. 338.

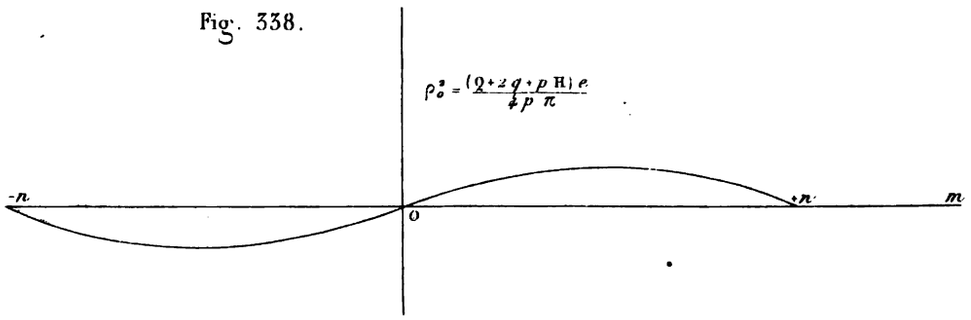


Fig. 343.

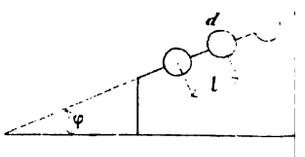
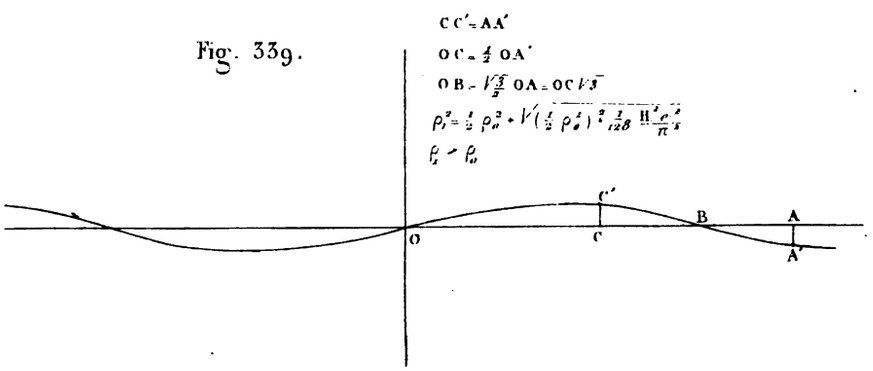


Fig. 339.



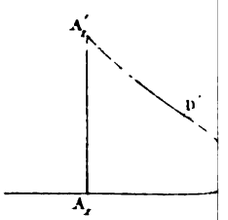
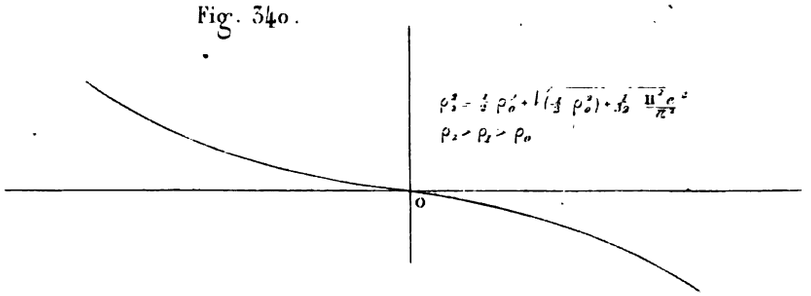


Fig. 340.



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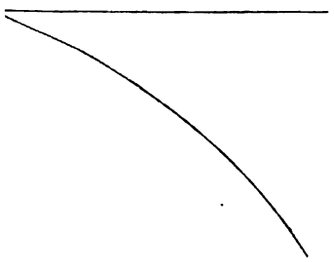

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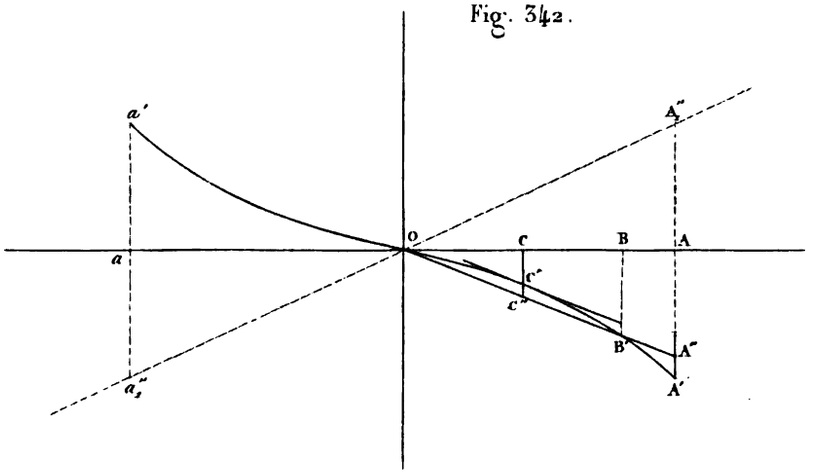
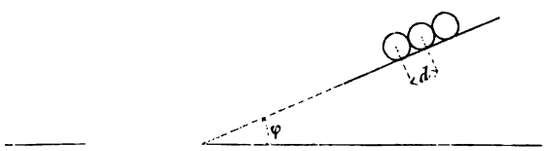


Fig. 343.



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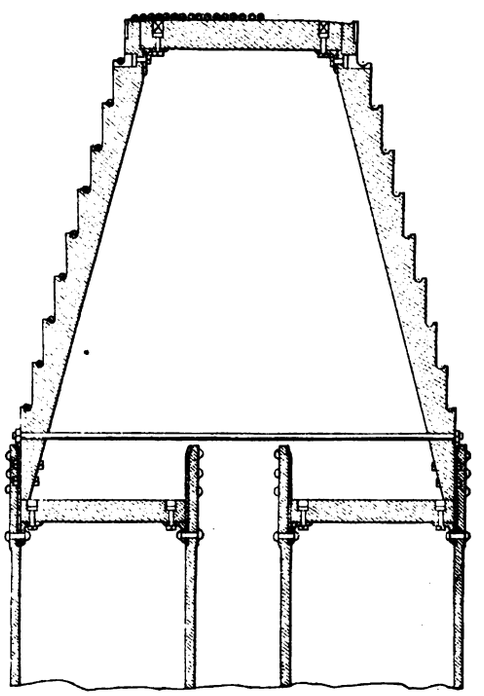

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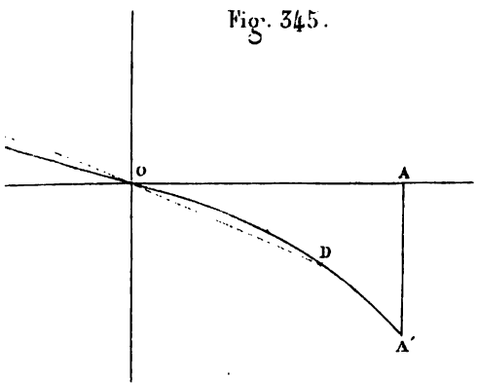

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J. CALLON. Exploitation des Mines.

Fig. 346.

Fig. 346.

Fig. 346.

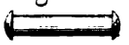

Fig. 346.

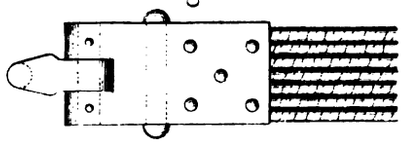

Fig. 346.

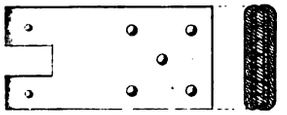

Fig. 346.

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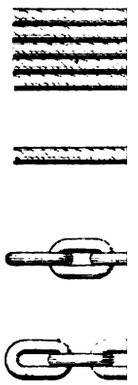
Fig. 346.



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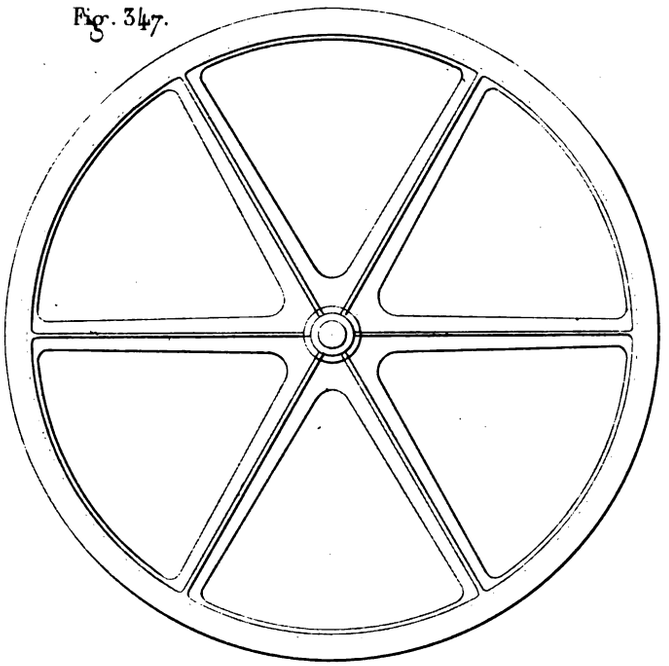


Fig. 347.

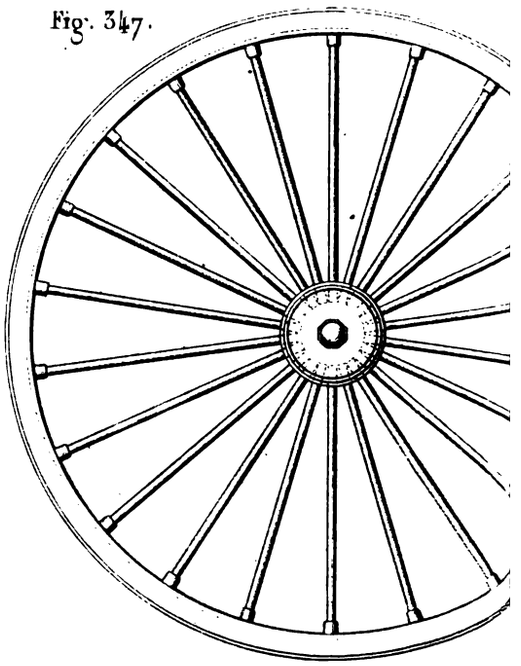
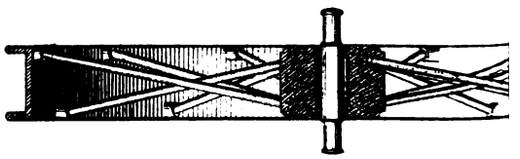


Fig. 347.

Fig. 347.



Echelle des Fig 346

50 40 30 20 10 0

Fig. 346.

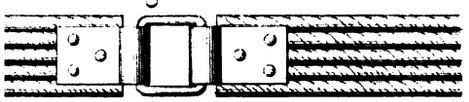


Fig. 346

Fig. 346.

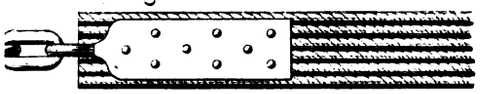


Fig. 346.

Fig. 346.

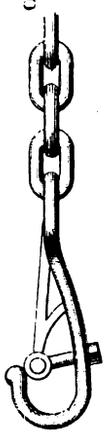


Fig. 346.

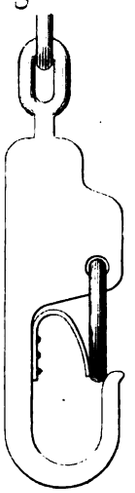


Fig. 346.

Fig. 346.

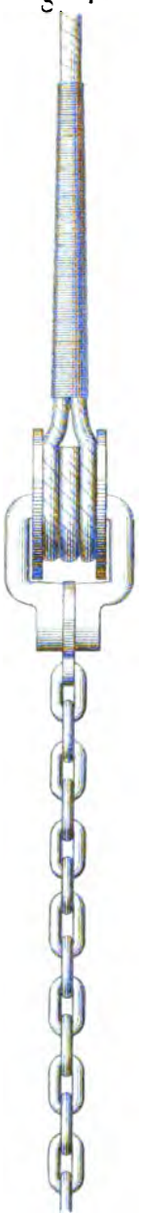
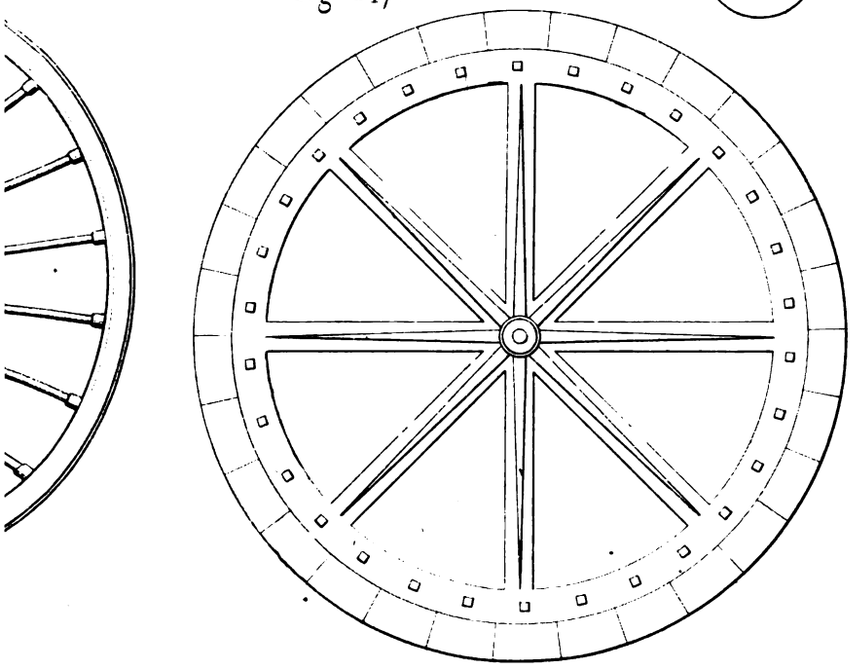


Fig 347.



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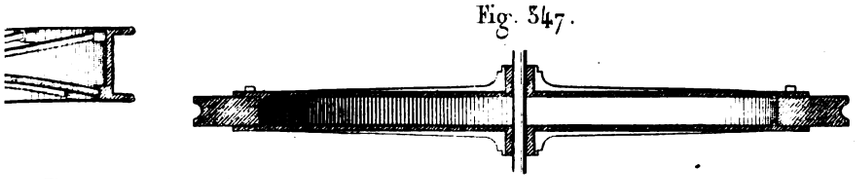

0m 10 pour 1 mètre

1 mètre

Echelle des Fig. 34[illegible] de 0m 05 pour 1 mètre

100 50 0 1 mètre

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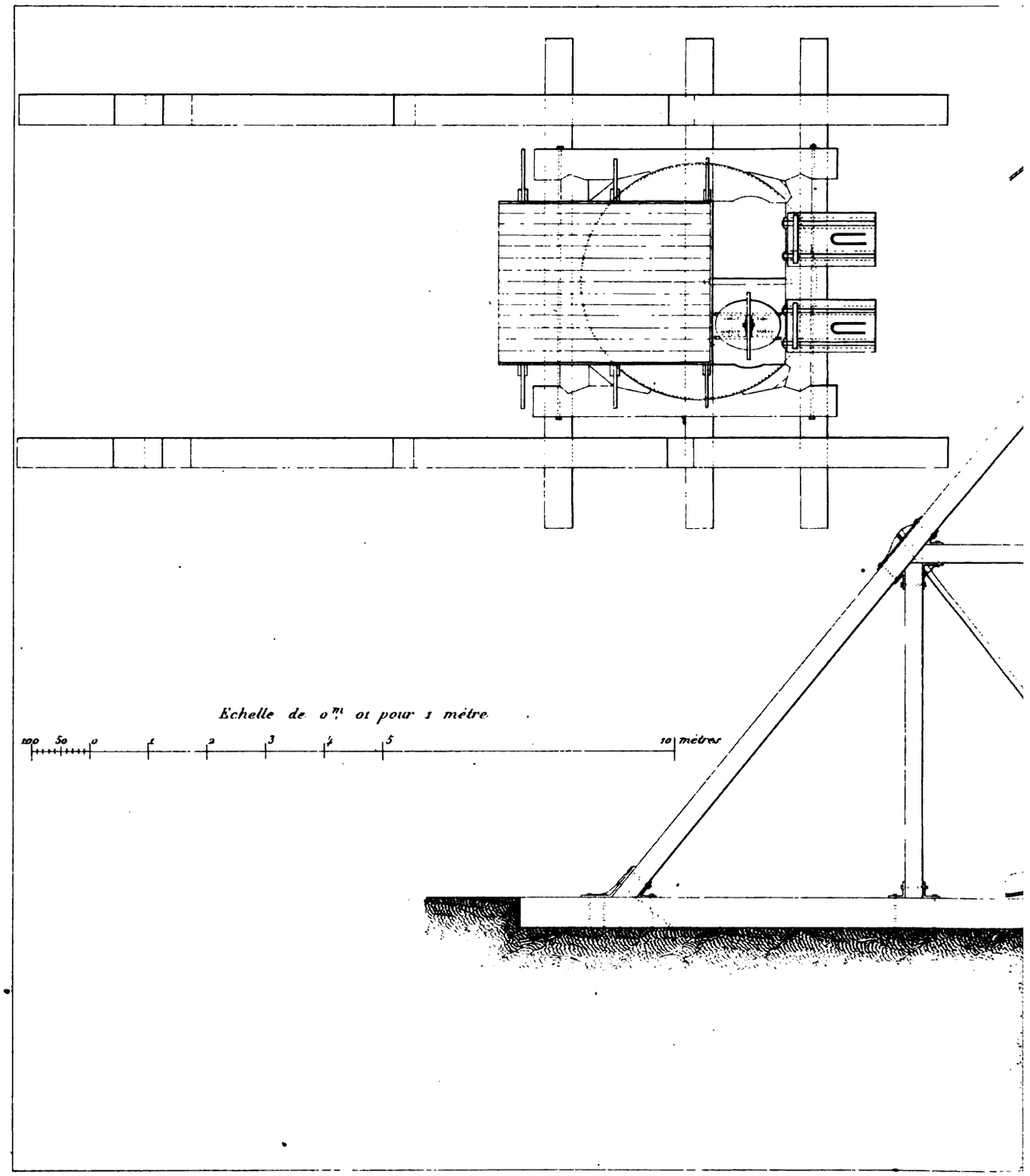
Echelle de 0m.01 pour 1 mètre
100 50 0 1 2 3 4 5 10 mètres

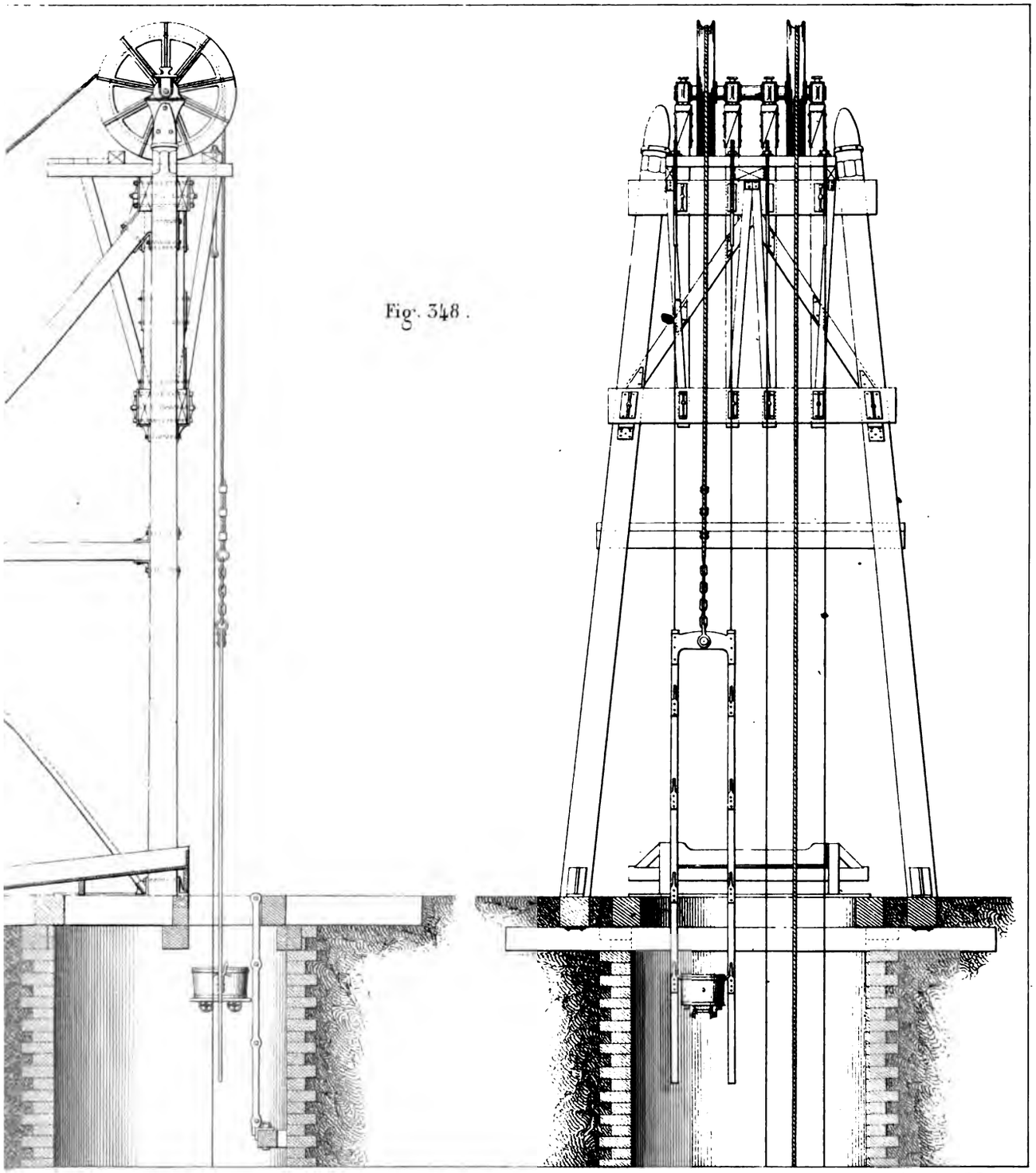

Fig. 348.

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Fig. 349.

Fig. 349.

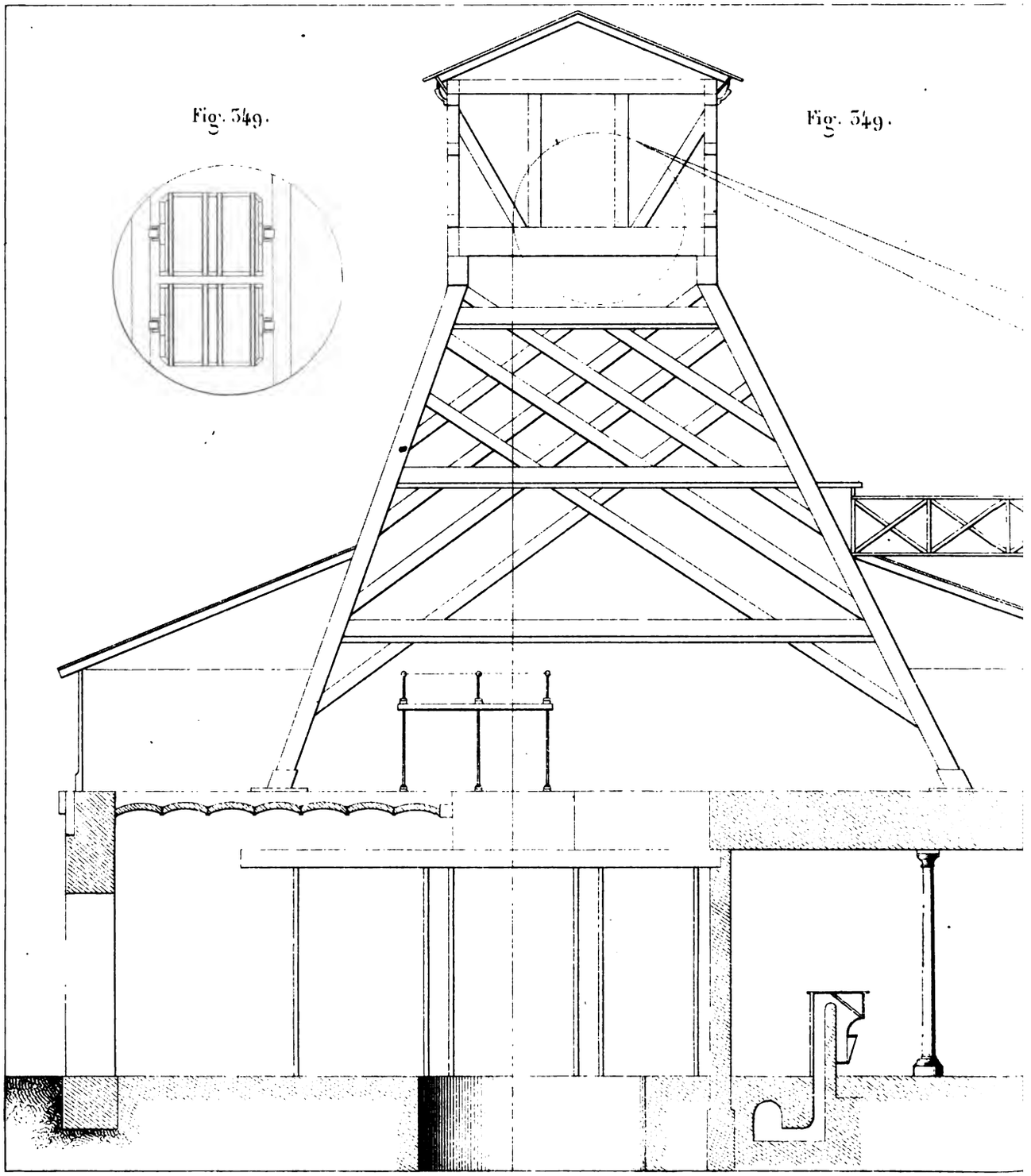


Fig. 35o.

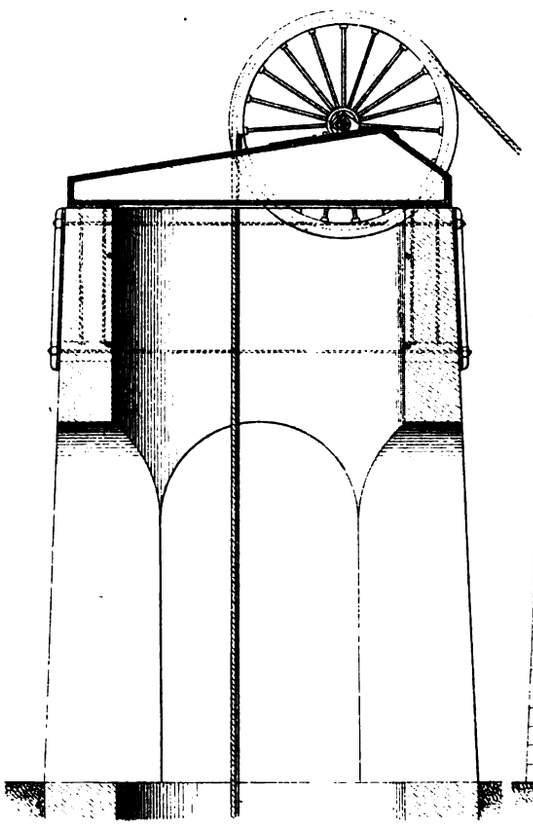
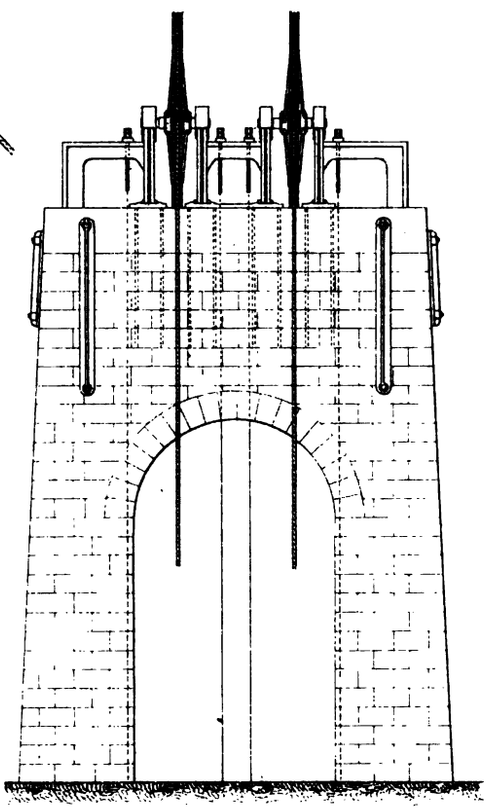


Fig. 35o.



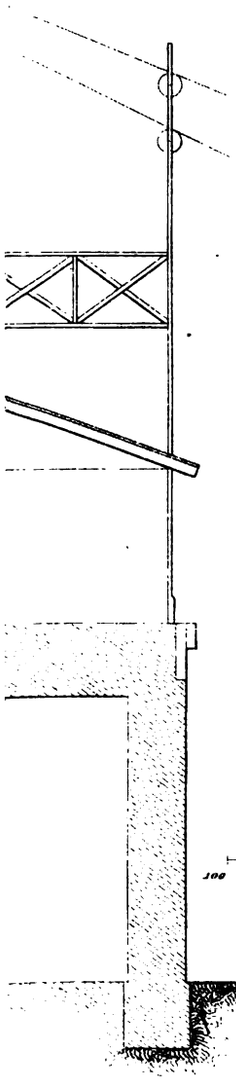
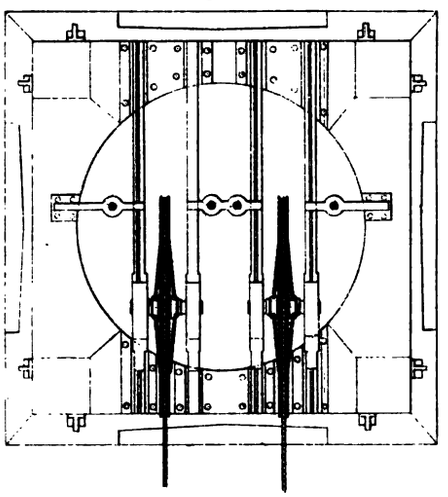


Fig. 35o.

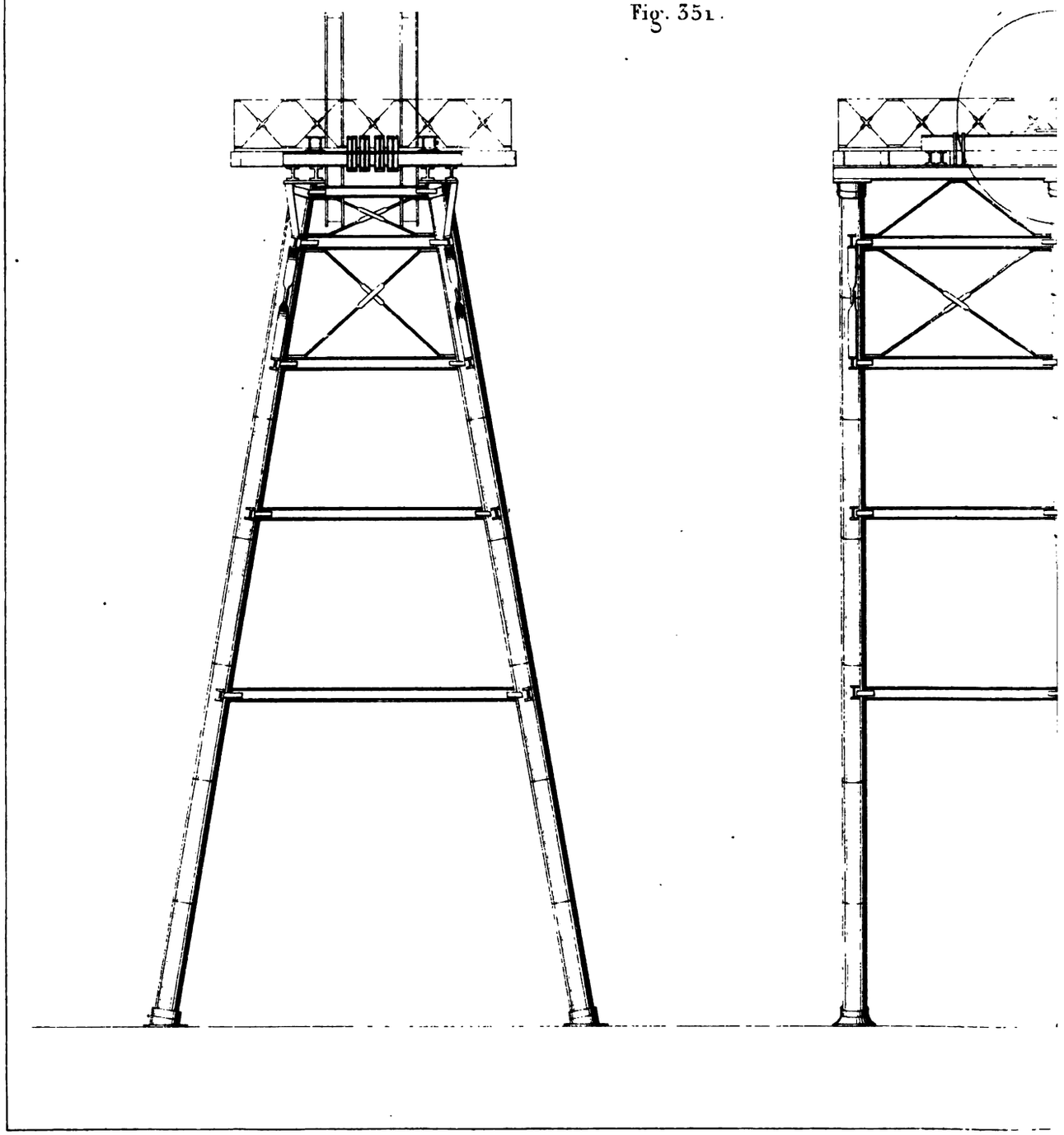


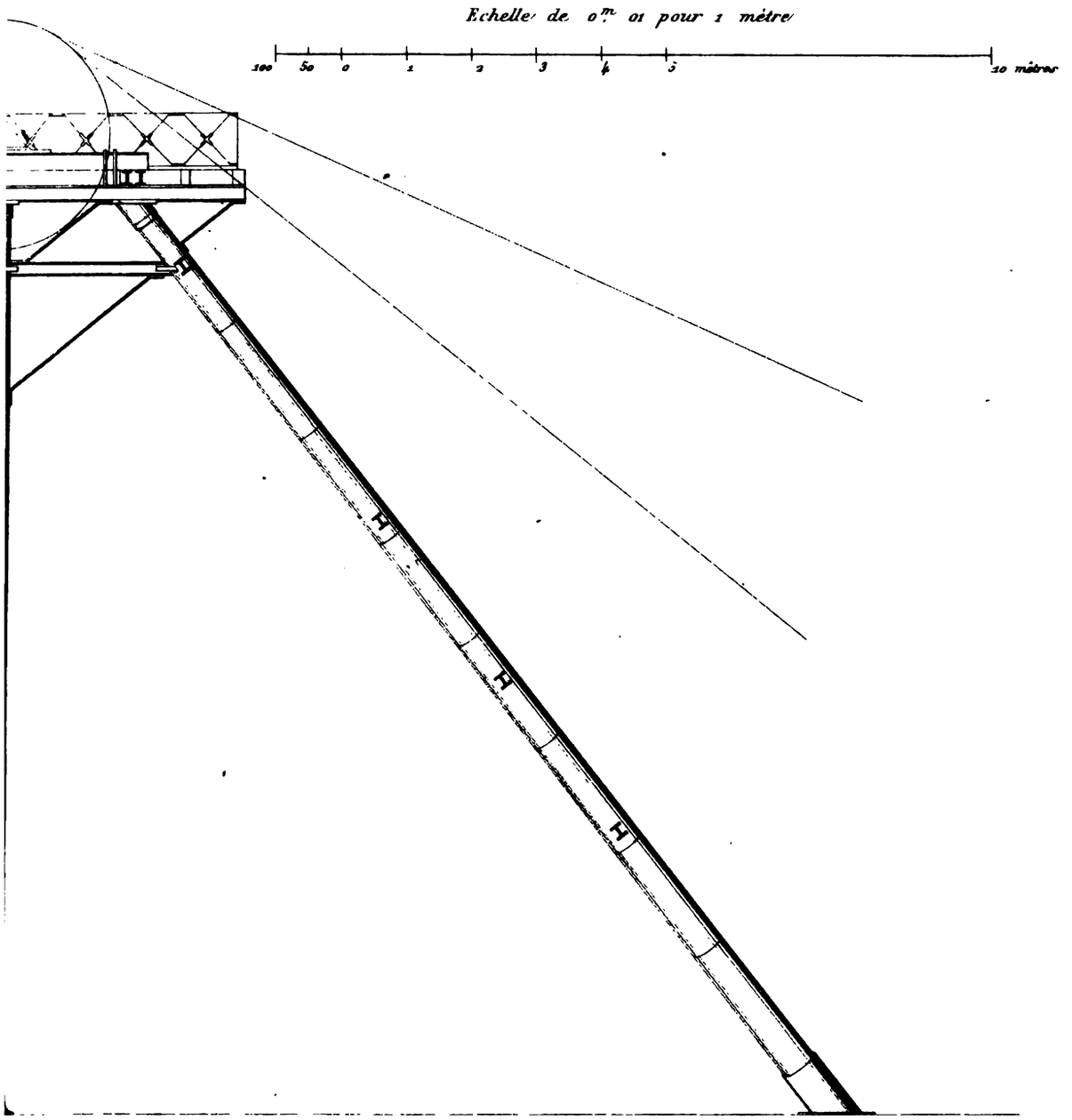
Echelle de 0.m 01 pour 1 mètre

100 50 0 1 2 3 4 5 mètres

Lemaître del. et sc.

Fig. 351.





Lemaire del. et sc.

Fig. 352.

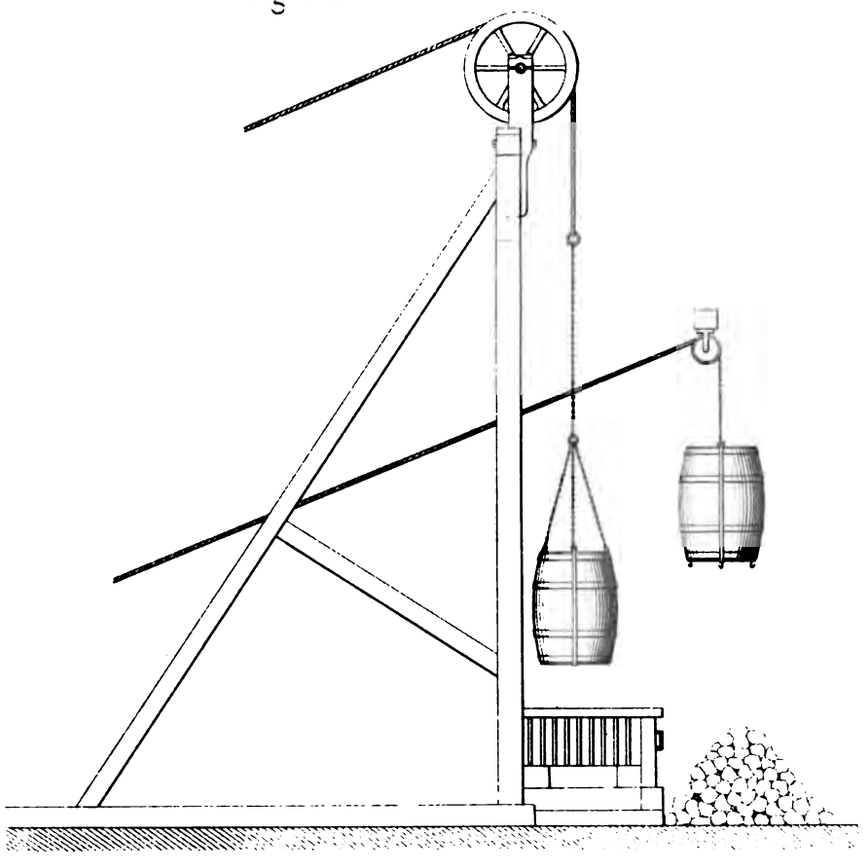


Fig. 354.

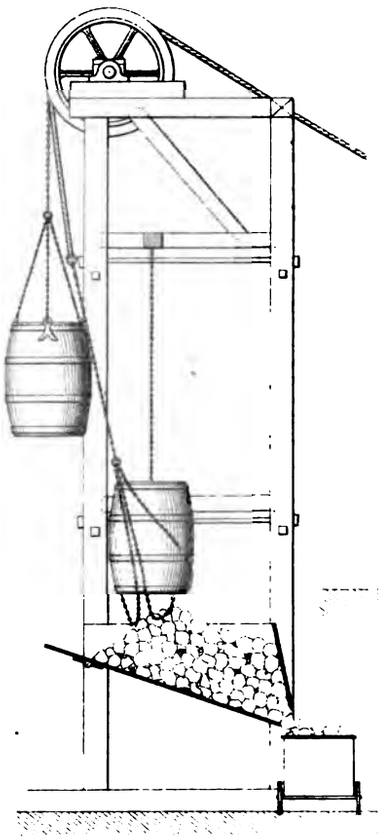


Fig. 353.

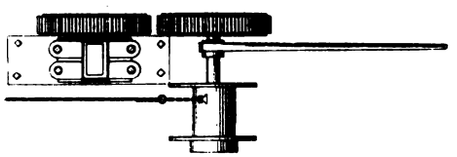
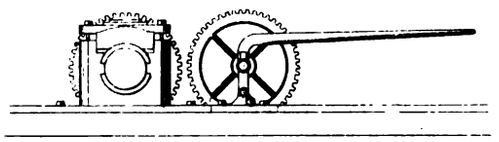
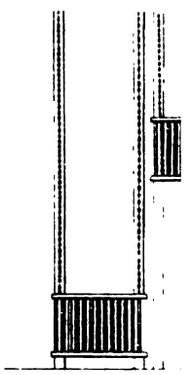
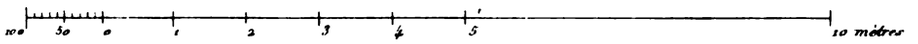


Fig. 355.





Echelle des Fig. 352 et 354 de $0^m.01$ pour 1 mètre



Echelle des Fig. 353 et 355 de $0^m.02$ pour 1 mètre

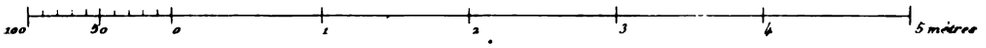


Fig. 354.

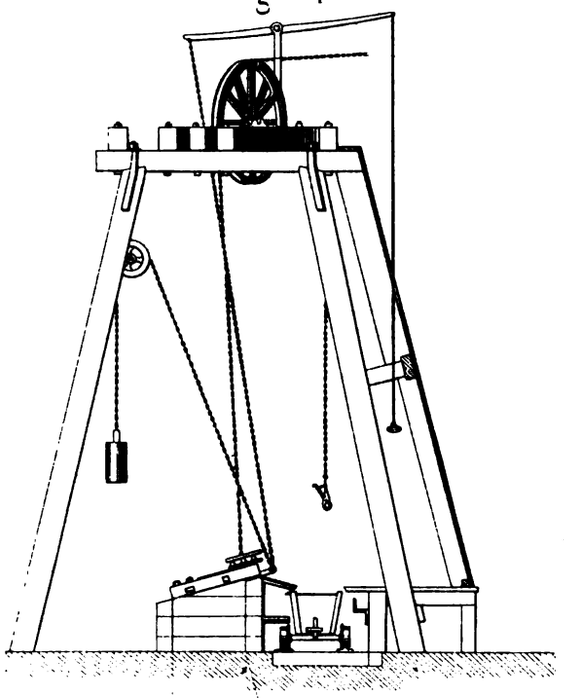


Fig. 354.

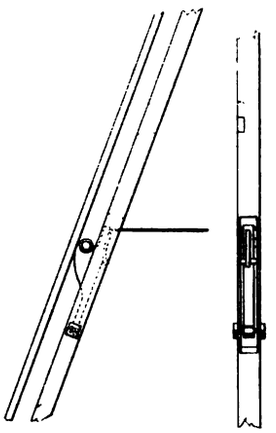
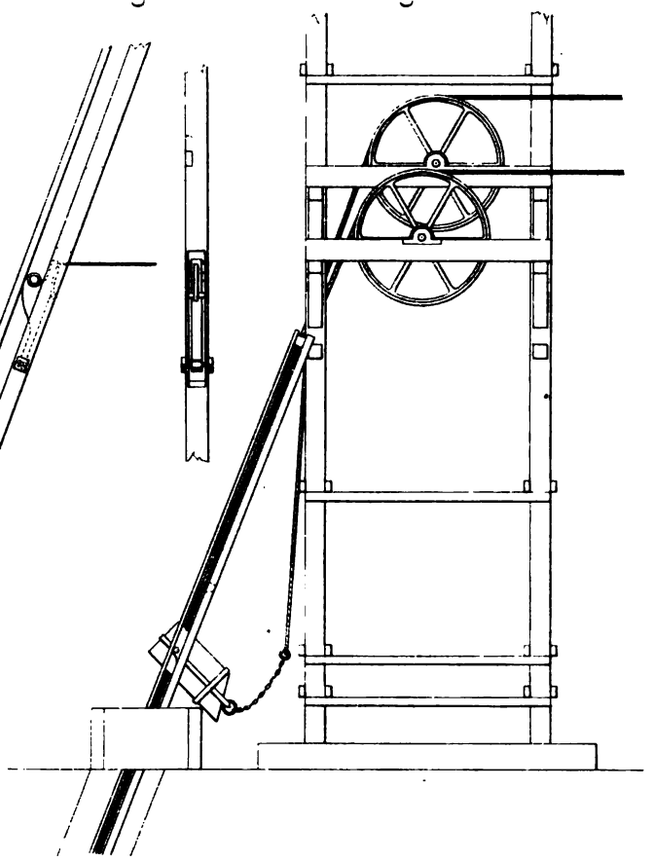


Fig. 354.



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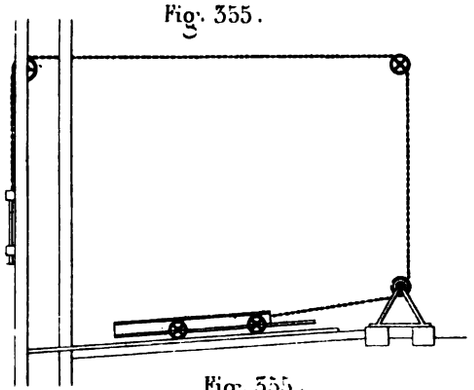

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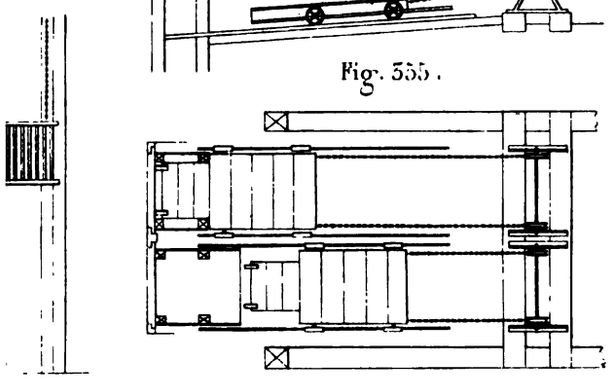
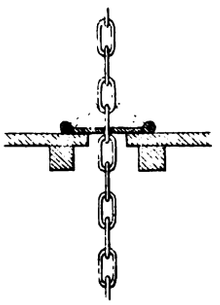


Fig. 354.



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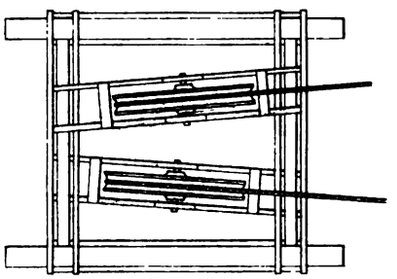

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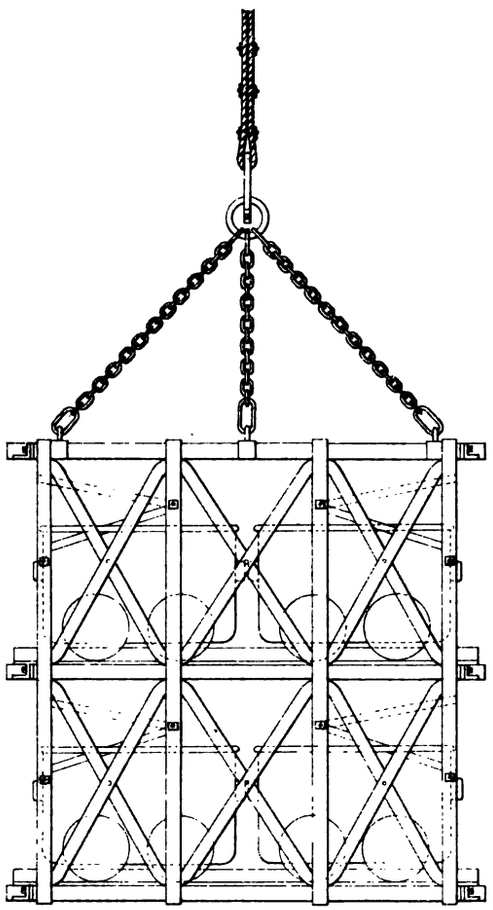

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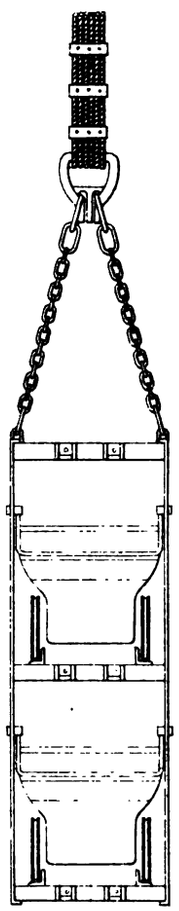
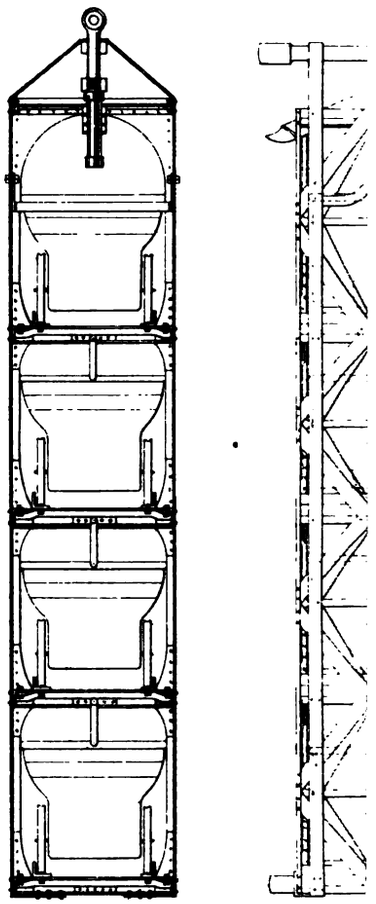


Fig. 357.



Echelle de 0.m 0

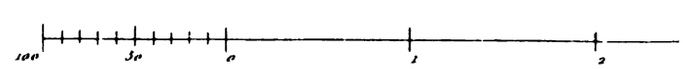


Fig. 357.

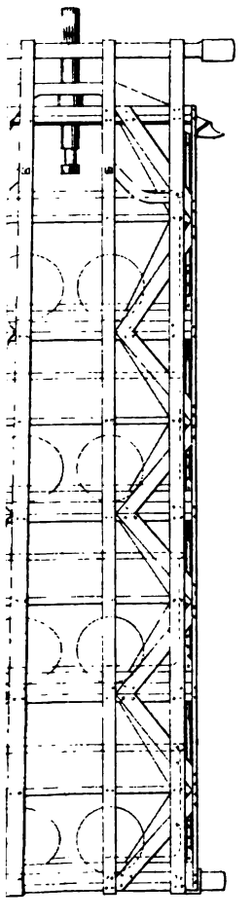


Fig. 358.

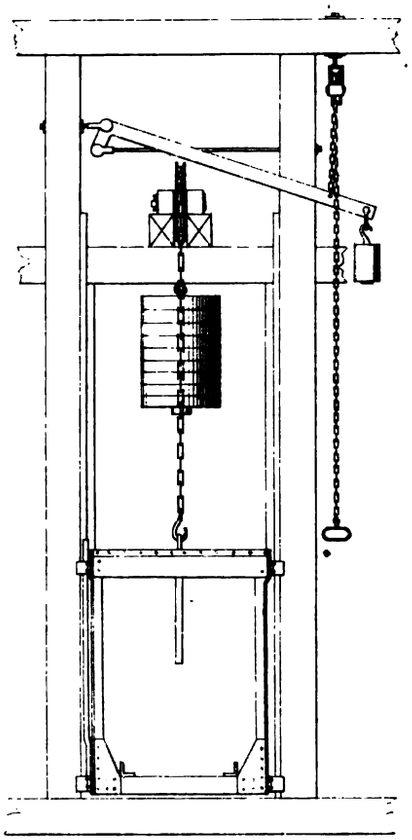
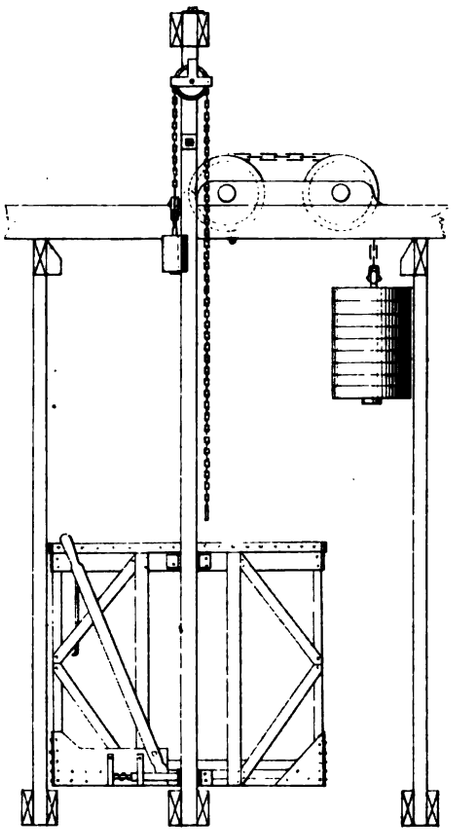


Fig. 358.



5 pour 1 mètre

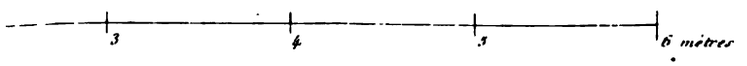


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Fig. 359.

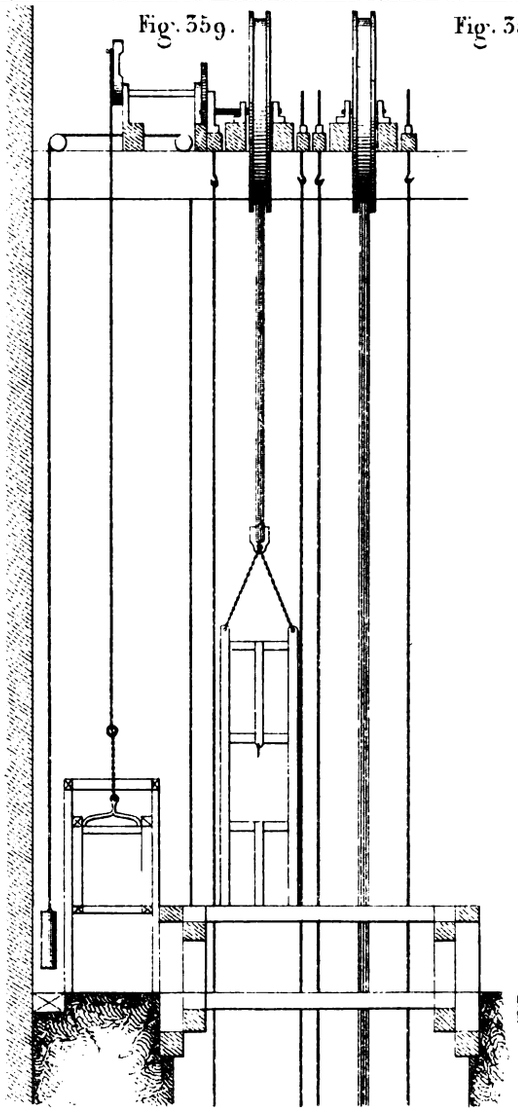
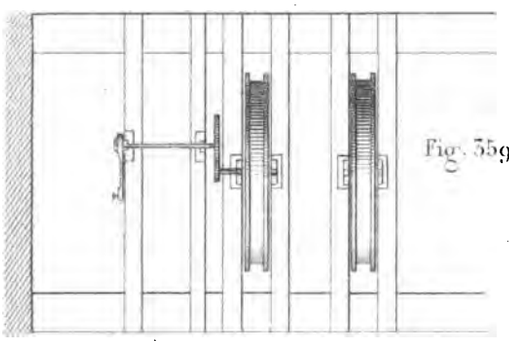


Fig. 359.



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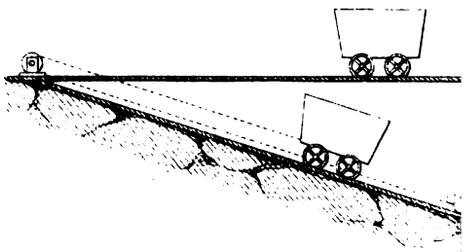


Fig. 360.

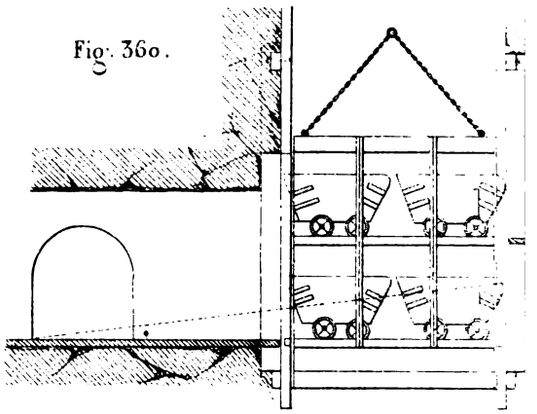


Fig. 360.

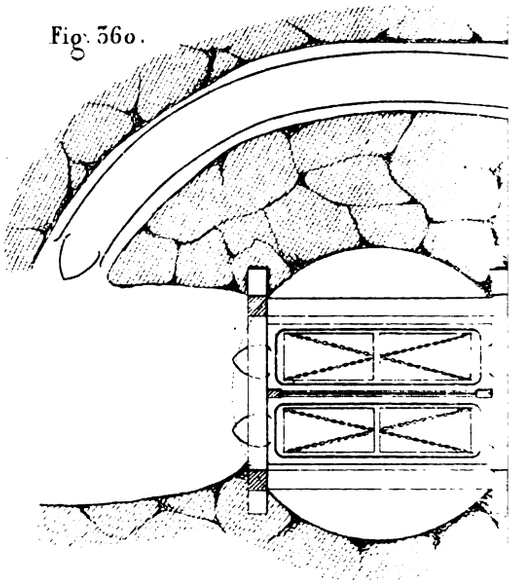
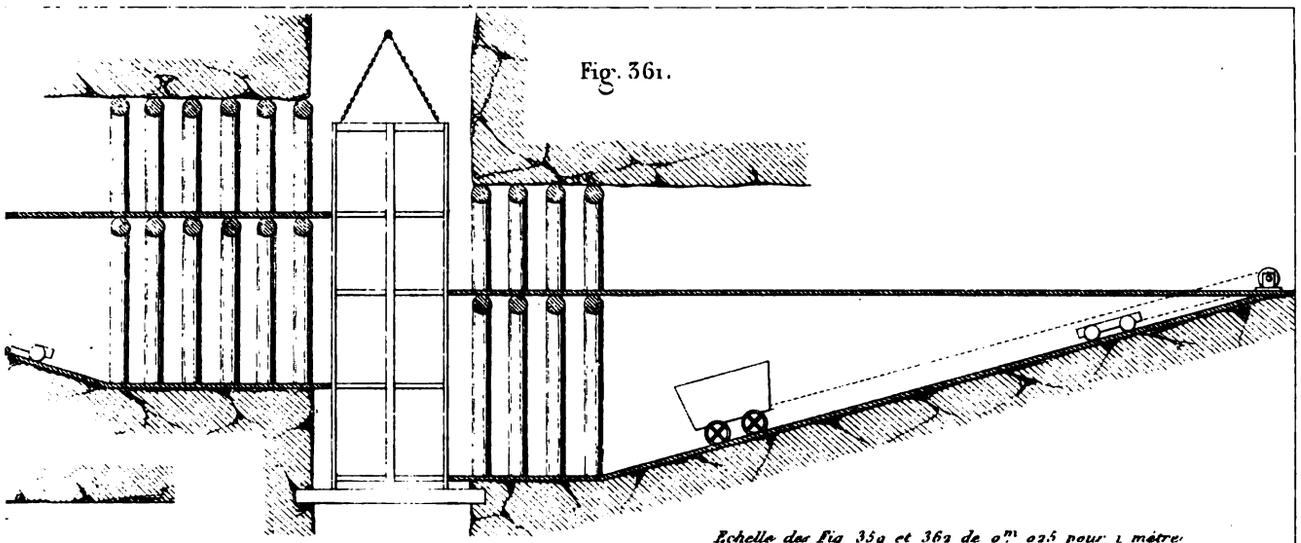
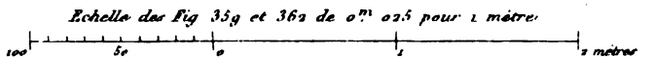


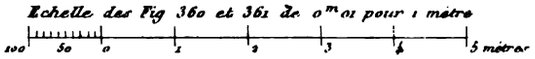
Fig. 361.



Echelle des Fig 359 et 362 de $0^{m}.025$ pour 1 mètre



Echelle des Fig 360 et 361 de $0^{m}.01$ pour 1 mètre



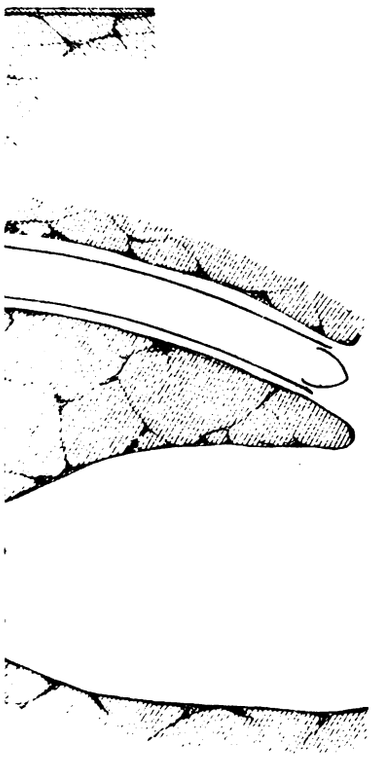


Fig. 362.

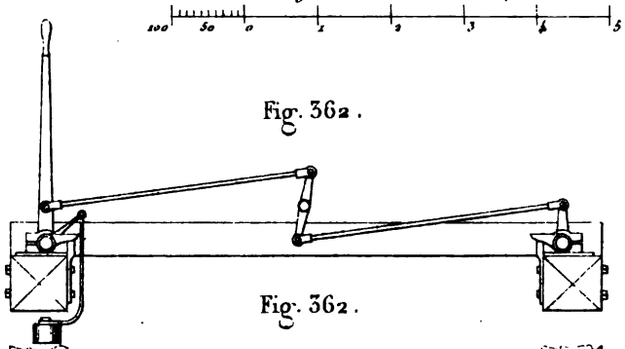


Fig. 362.

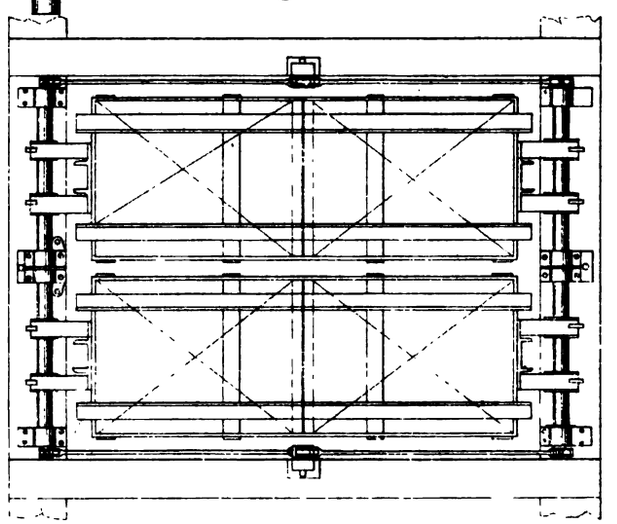


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Fig. 363.

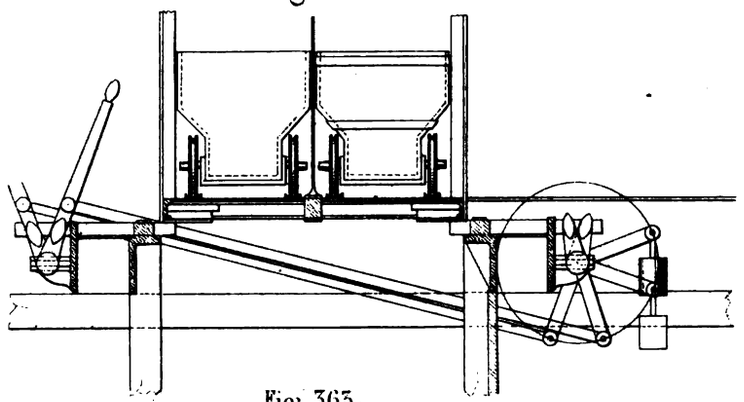


Fig. 364.

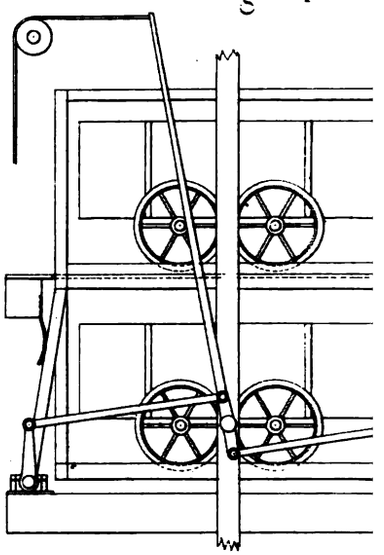


Fig. 365.

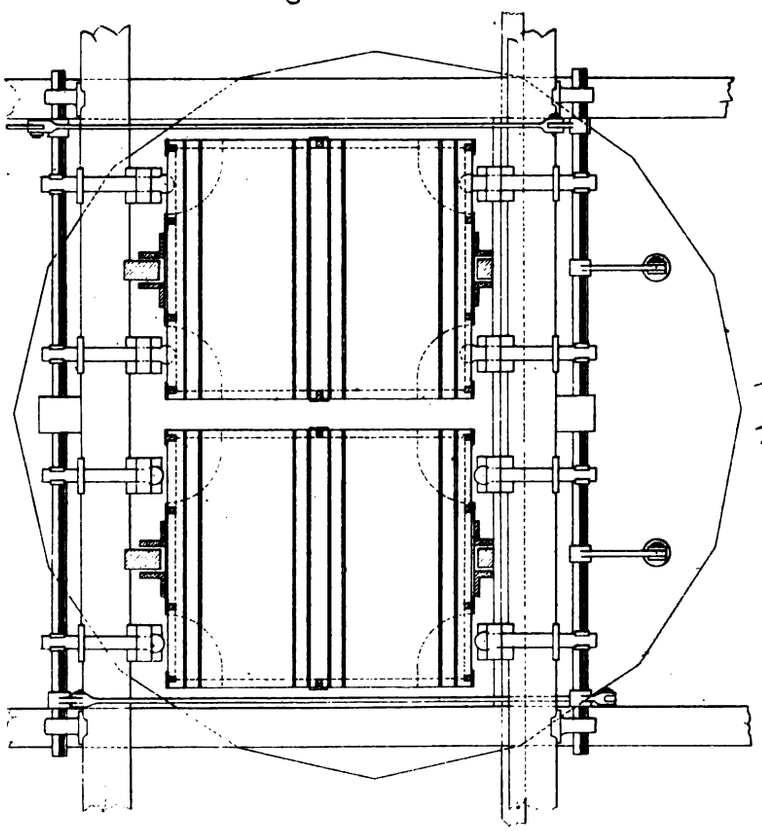


Fig. 367.

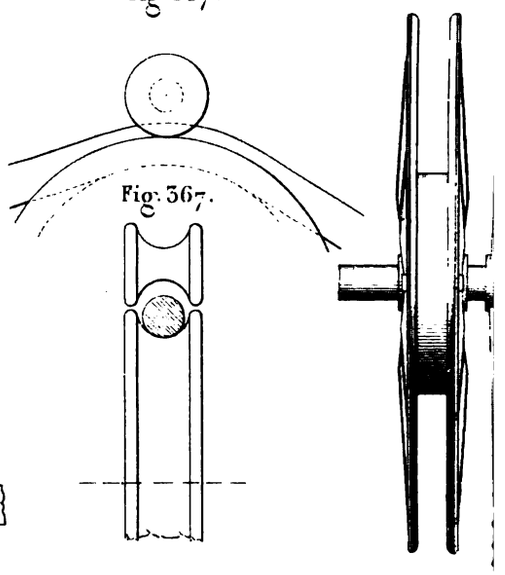
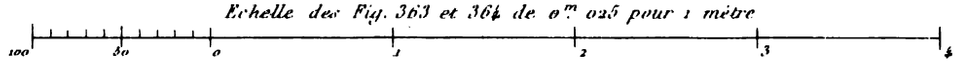


Fig. 367.

Echelle des Fig. 363 et 364 de 0^m 025 pour 1 mètre



Echelle des Fig. 365 et 366 de 0^m 015 pour 1 mètre

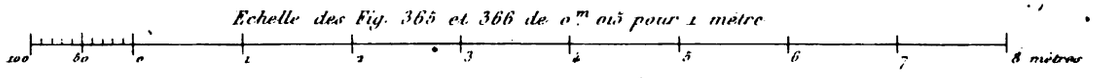


Fig. 365.

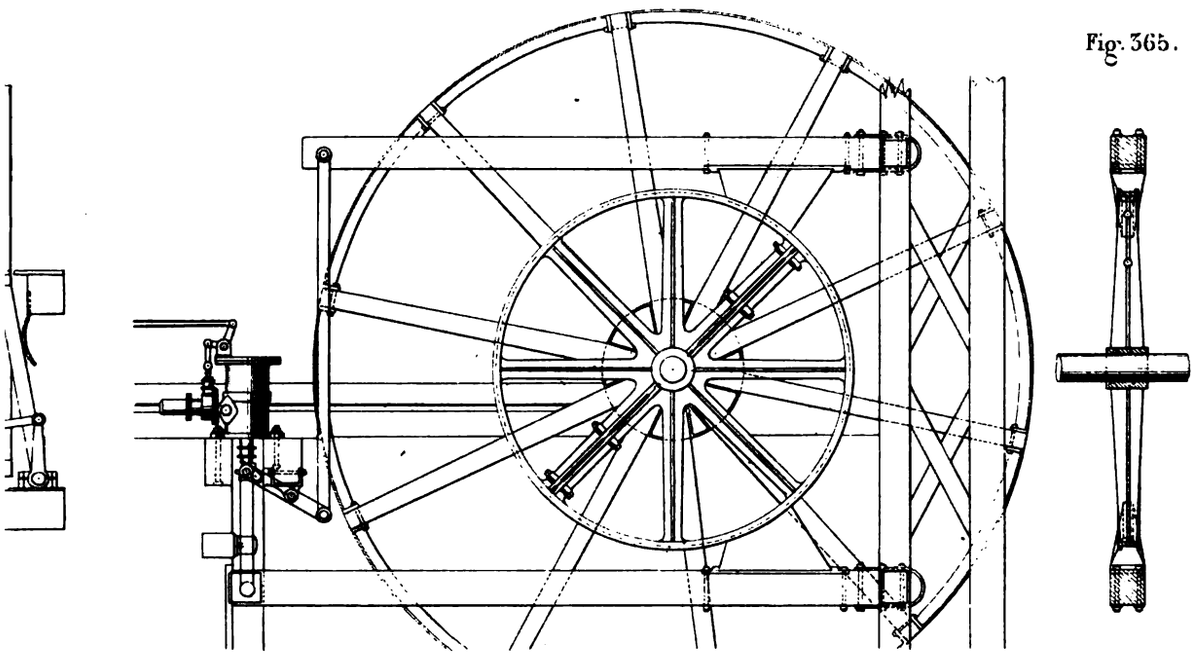


Fig. 365.

Fig. 366.

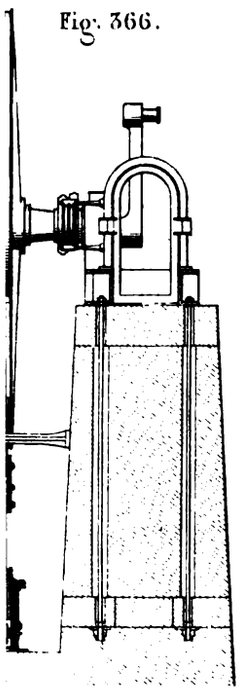


Fig. 366.

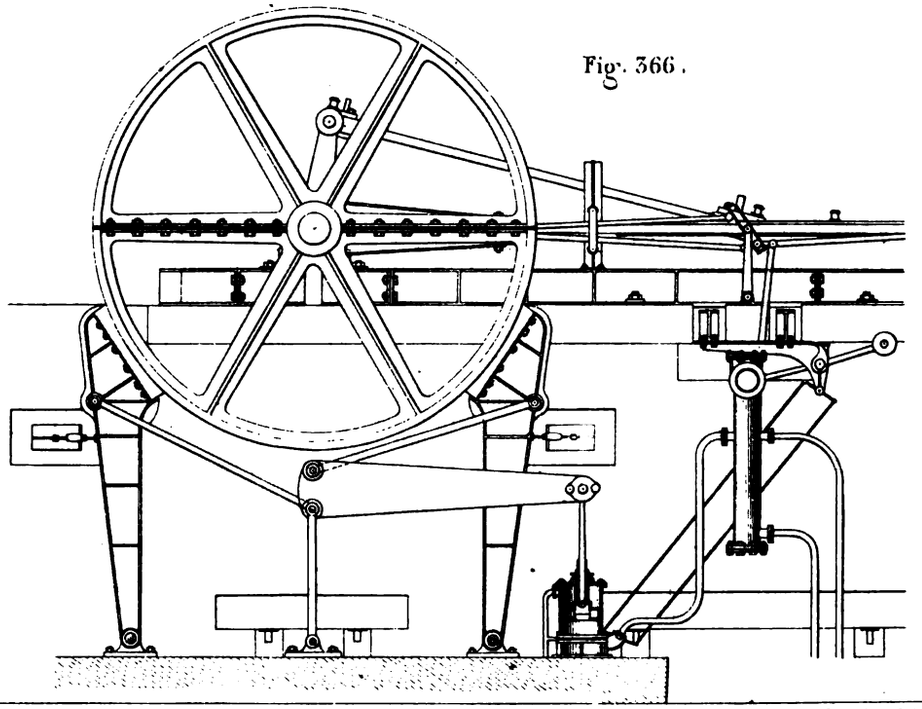


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Fig. 368.

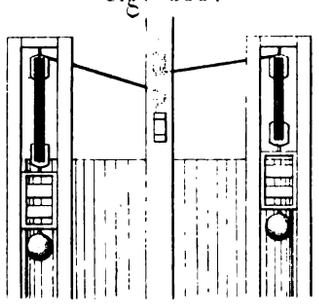


Fig. 368.

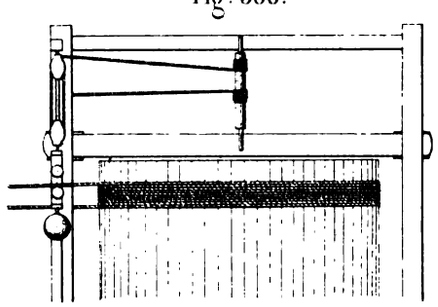


Fig. 369.

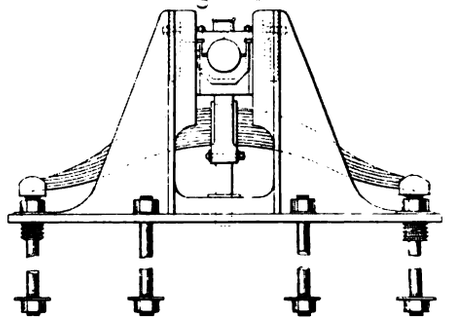


Fig. 371.

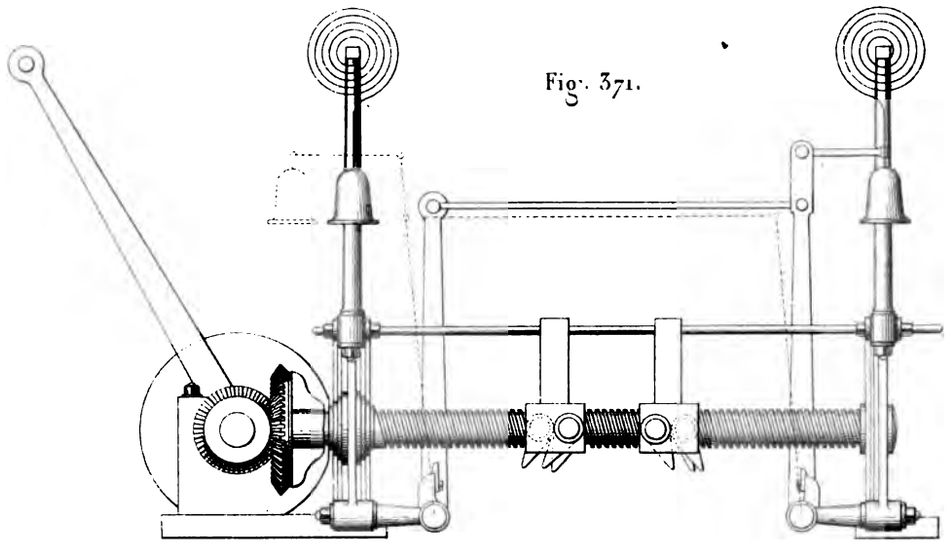
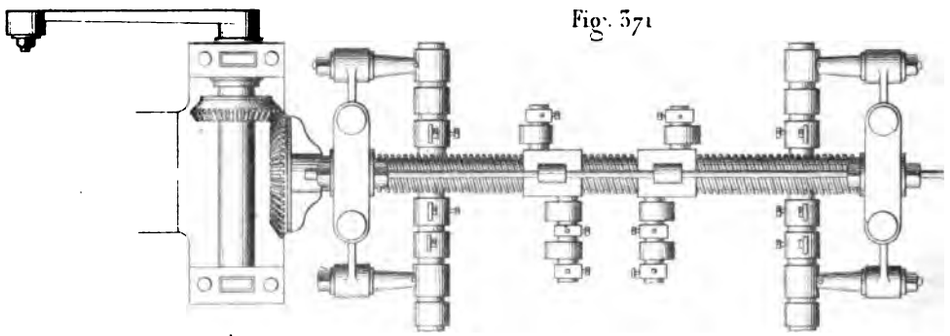
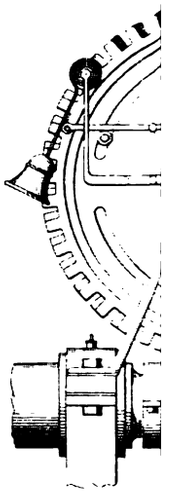
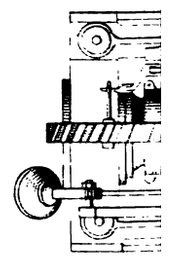


Fig. 371







Echelle de la Fig. 368 de 0^m 01 pour 1 mètre

100 50 0 1 2 3 4 5 10 mètres

Echelle de la Fig. 369 de 0^m 02 pour 1 mètre

100 50 0 1 2 3 4 5 mètres

Fig. 369. Fig. 370. Fig. 370 Fig. 370. Fig. 370. Fig. 372.

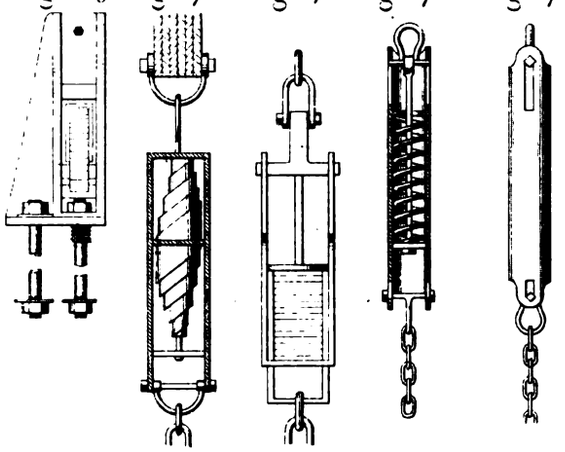


Fig. 371

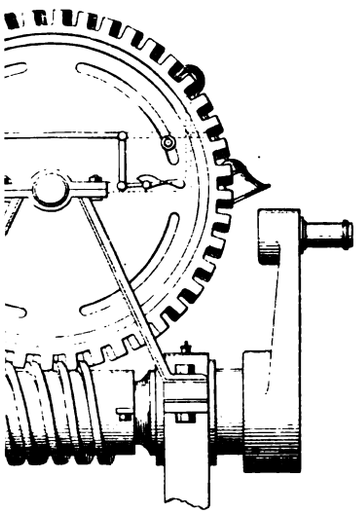


Fig. 371.

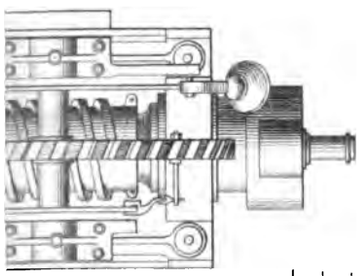
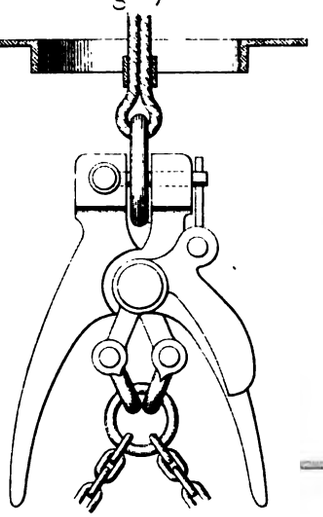


Fig. 372.



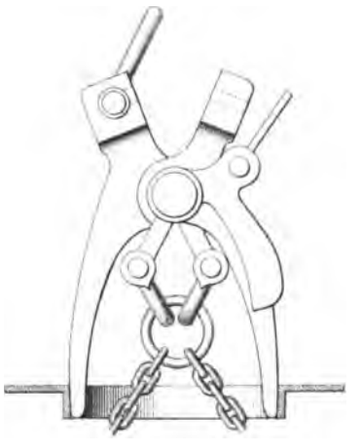


Fig. 373.

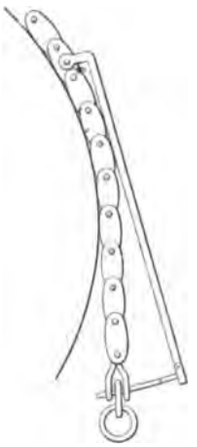


Fig. 374.

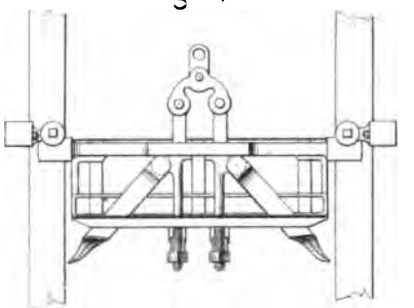
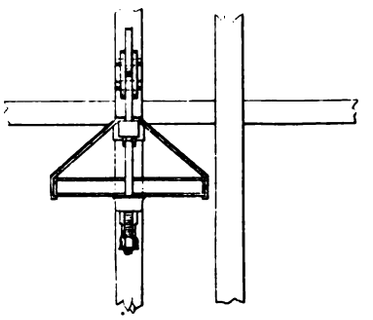


Fig. 374.



Echelle des Fig. 370, 371 et 374 de 0^m 05 pour 1 mètre

200 50 0 1 2 mètres

Leconitre del et sc.

Fig. 375.

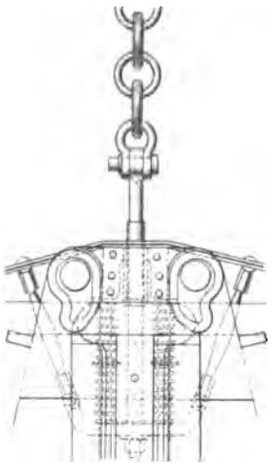


Fig. 375.

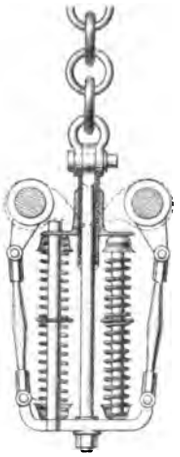


Fig. 377.

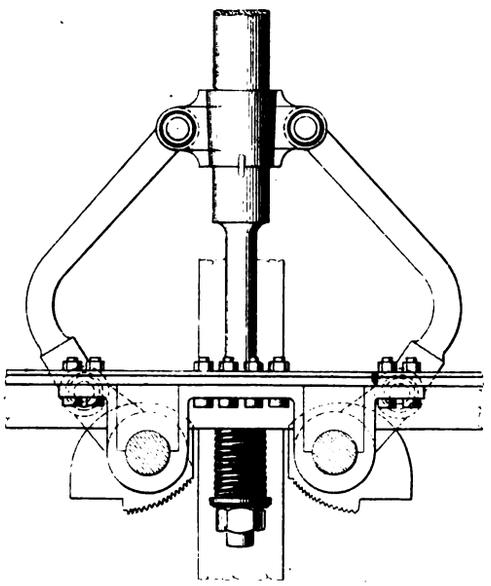


Fig. 377.

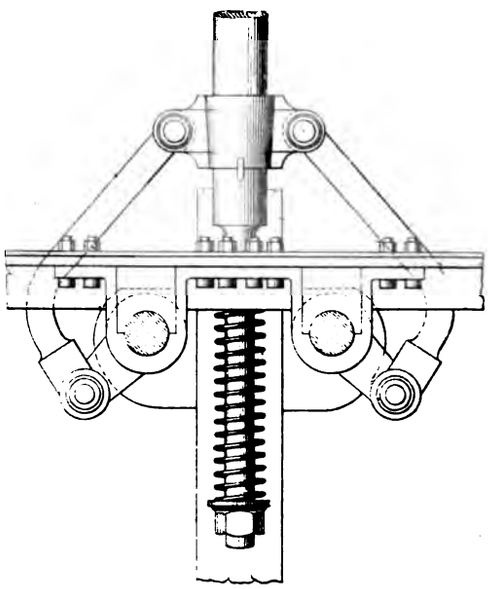
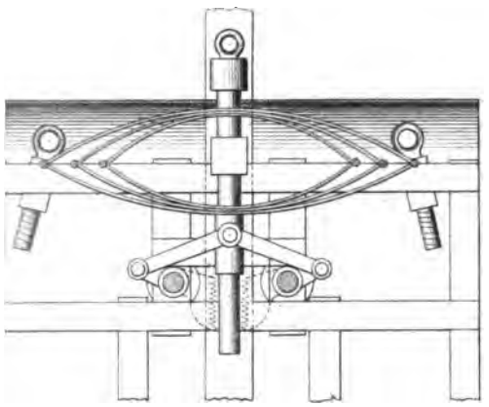


Fig. 376.



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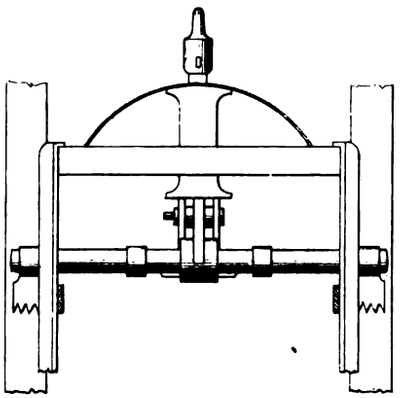

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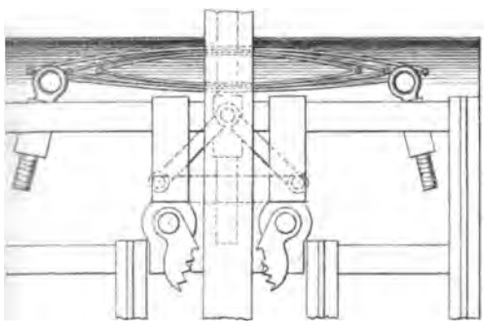

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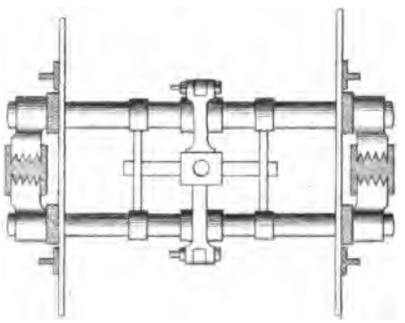

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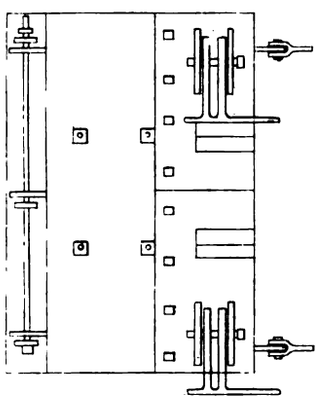
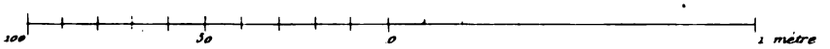


Echelle des Fig. 375 et 376 de 0^{m} 05 pour 1 mètre



Echelle de la Fig. 377 de 0^{m} 10 pour 1 mètre

Echelle de la Fig 378 de 0^{m} 02 pour 1 mètre

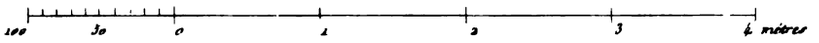


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Fig. 379.

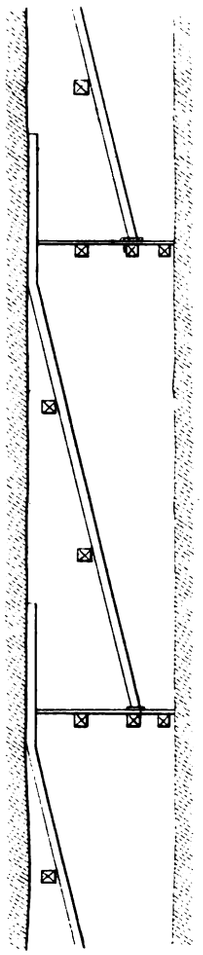
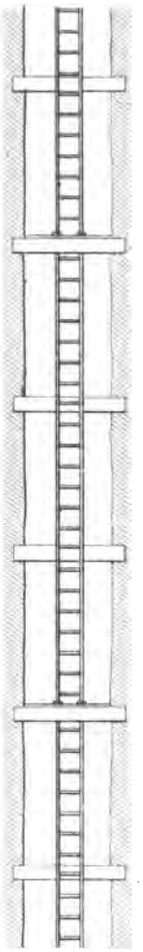


Fig. 379.



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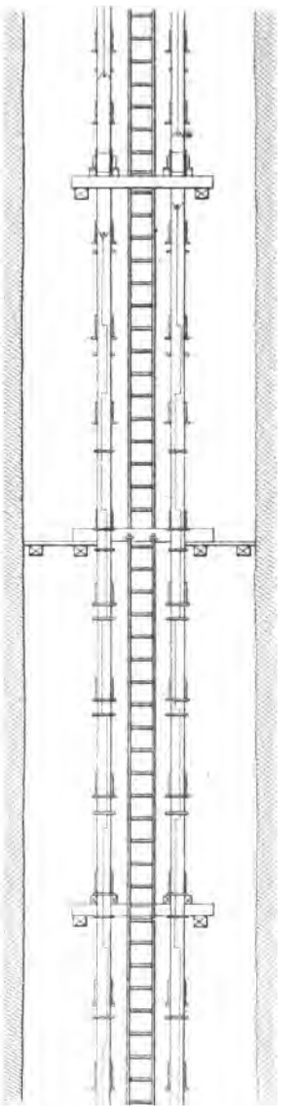
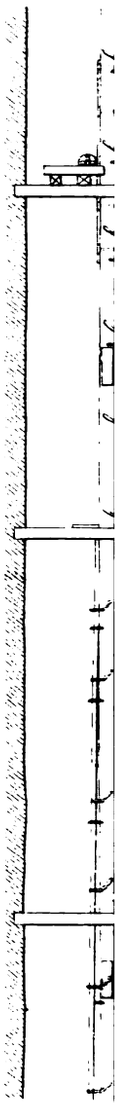


Fig.



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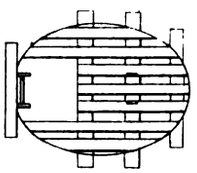


Fig. 384 A.

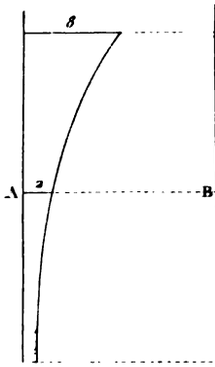
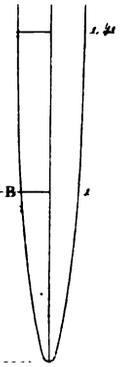
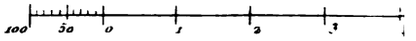


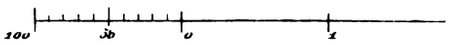
Fig. 384 B.



Echelle des Fig. 379 à



Echelle de la Fig. 38



80.

Fig. 381.

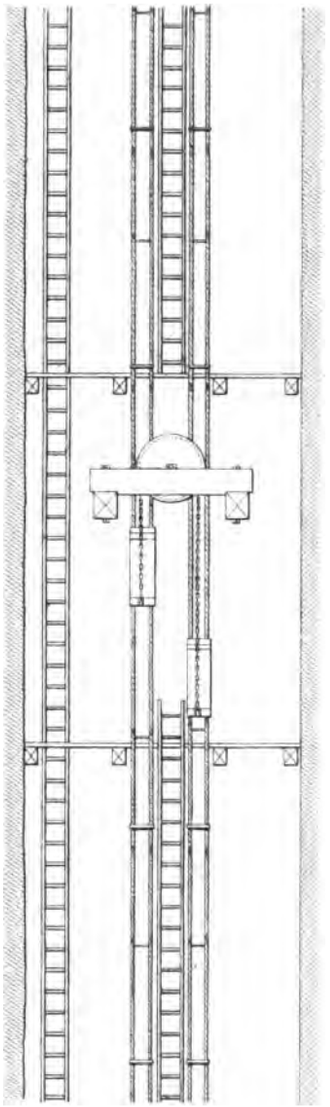


Fig. 381.

Fig. 382.

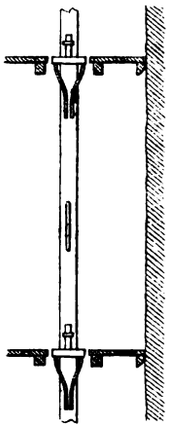


Fig. 382.

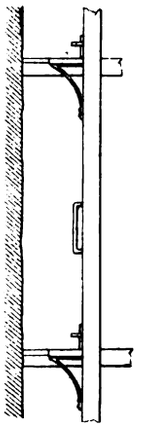


Fig. 382.

Fig. 383.

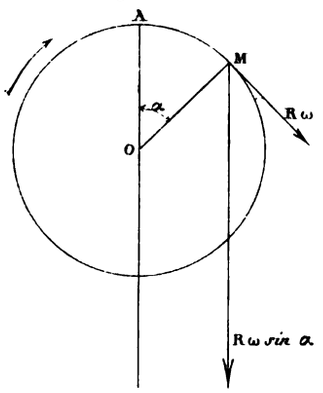
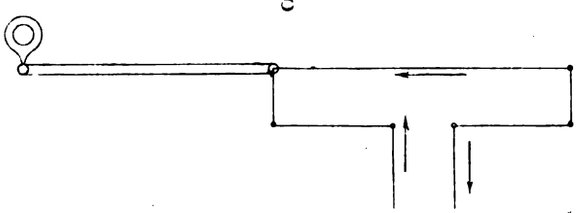
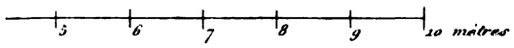


Fig. 385.



92 de 0^m 01 pour 1 mètre



le 0^m 02 pour 1 mètre

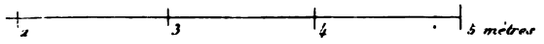


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Fig. 386.

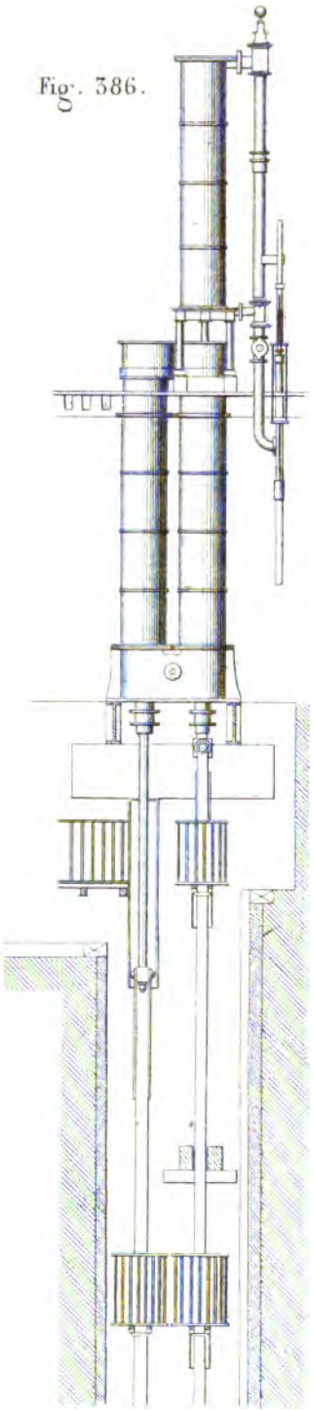


Fig. 386.

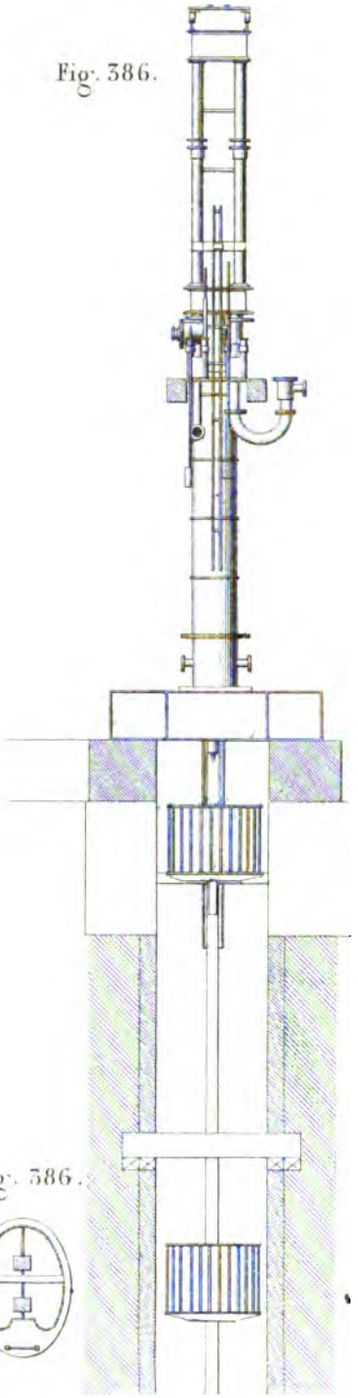
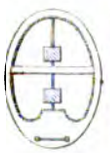


Fig. 386.



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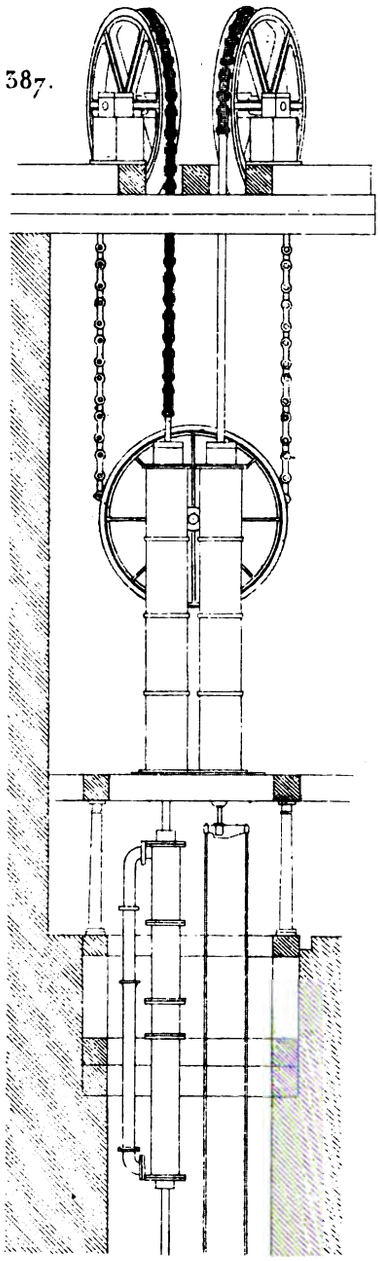
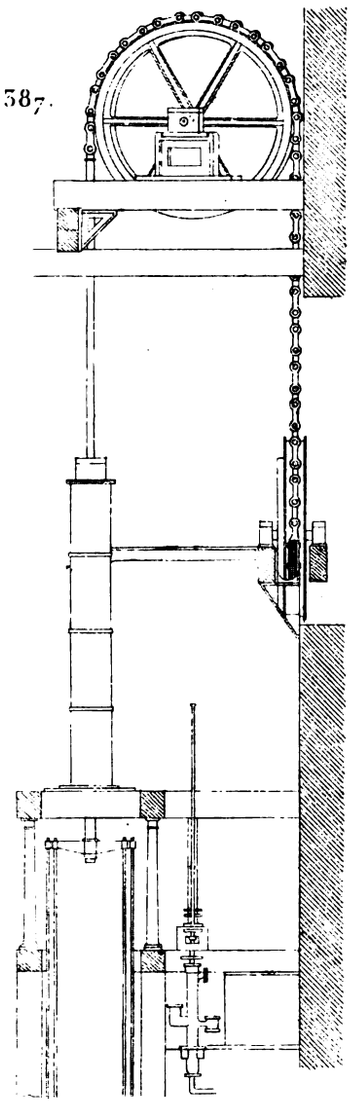


Fig.

g. 387.



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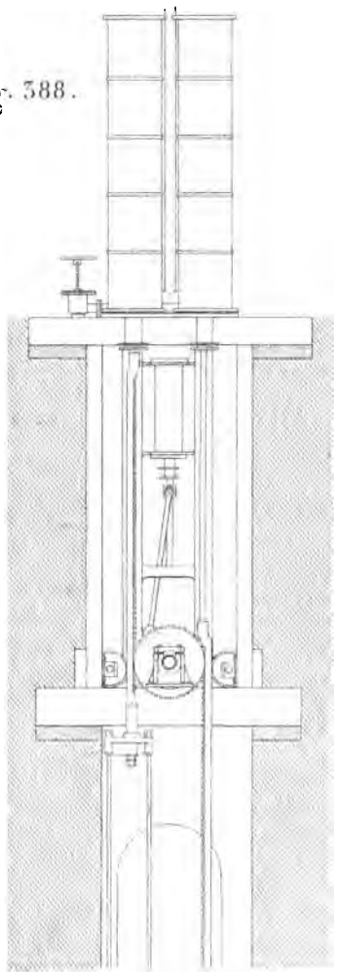

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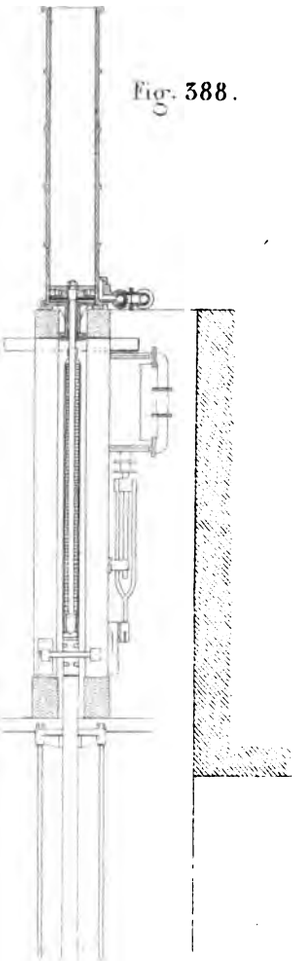


Fig. 388.

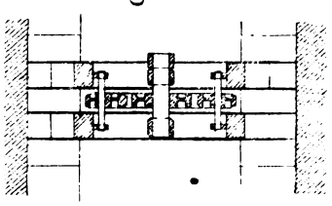
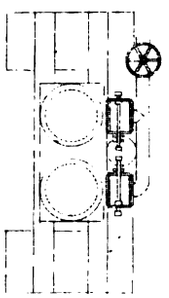


Fig. 388.



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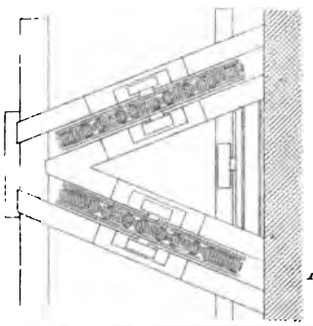

Echelle de 0^{m} 01 pour 1 mètre

100 50 0 1 2 3 4 5 10 mètres

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Fig. 389.

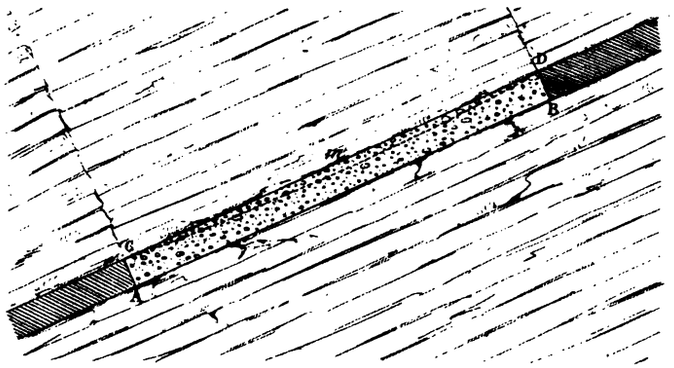


Fig. 390

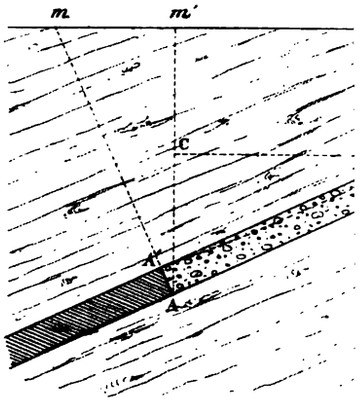


Fig. 392 A

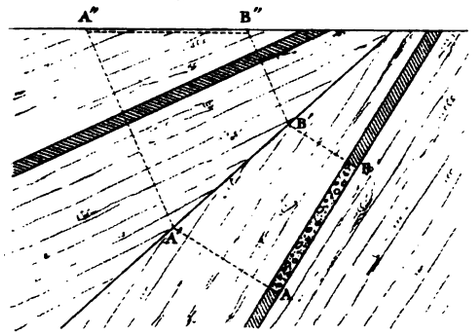


Fig. 392 B

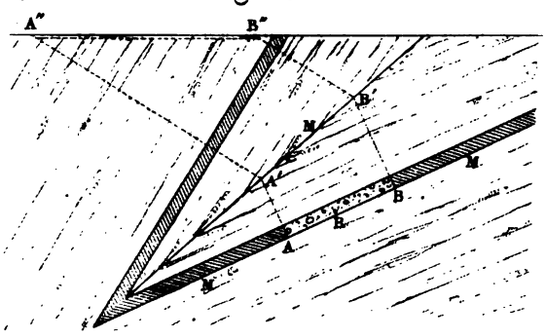
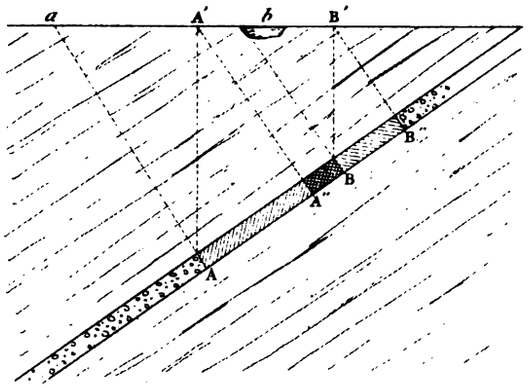


Fig. 396.



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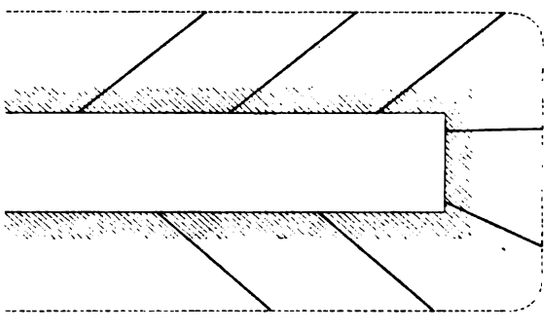
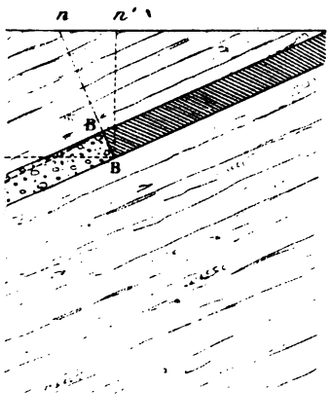


Fig. 391.



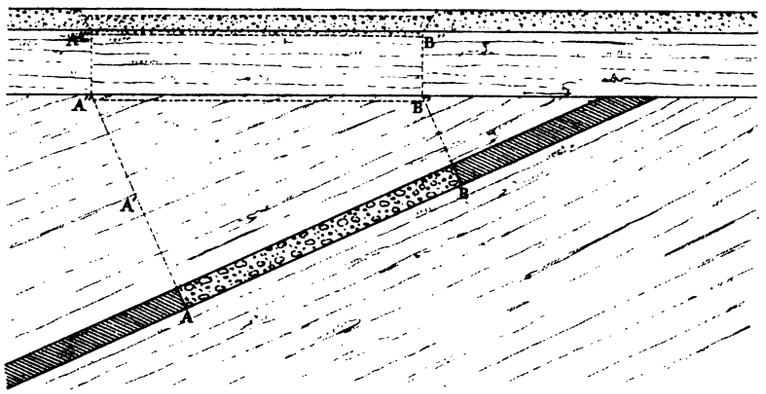


Fig. 393.

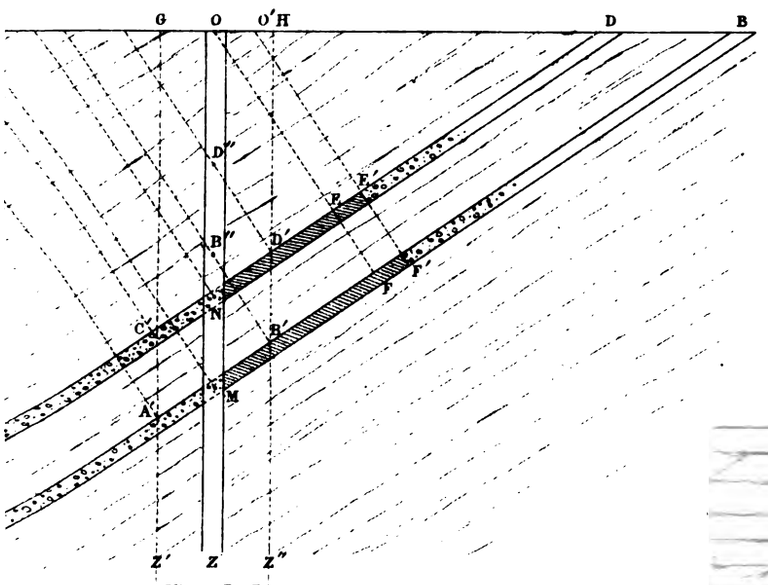


Fig. 393.

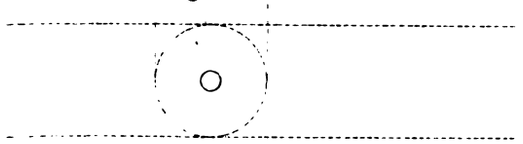


Fig. 394.

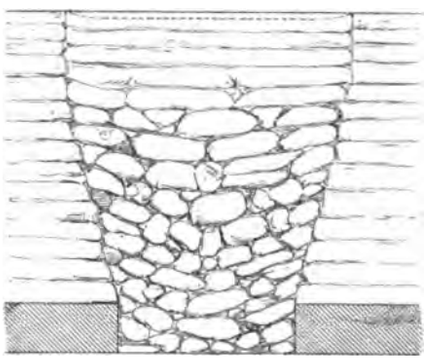


Fig. 395.

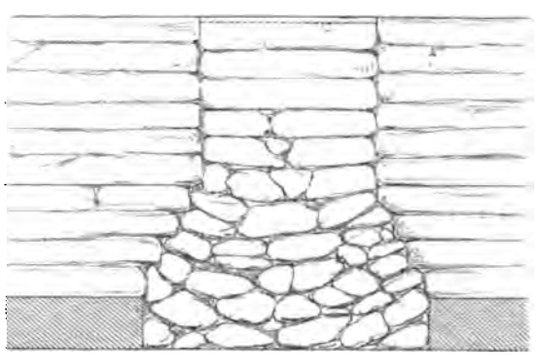


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Fig. 398.

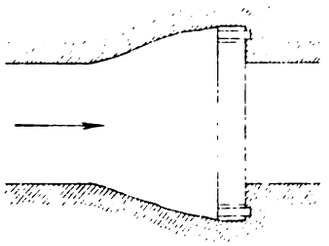


Fig. 399.

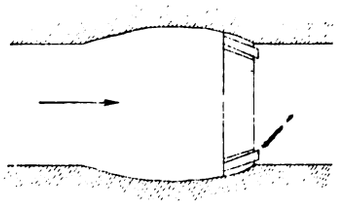


Fig. 400.

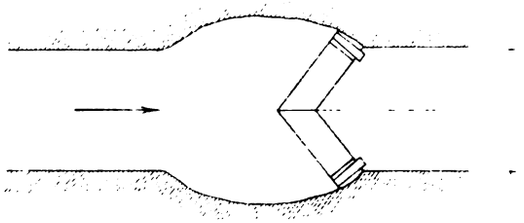


Fig. 404.

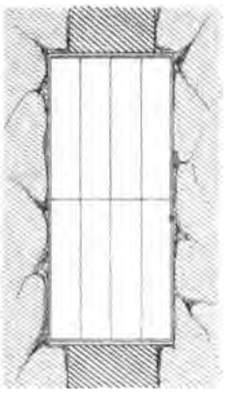


Fig. 404.

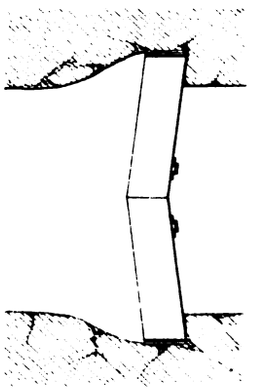
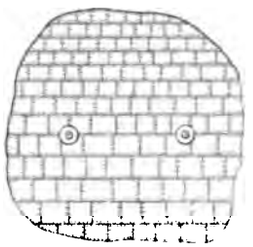


Fig. 406.



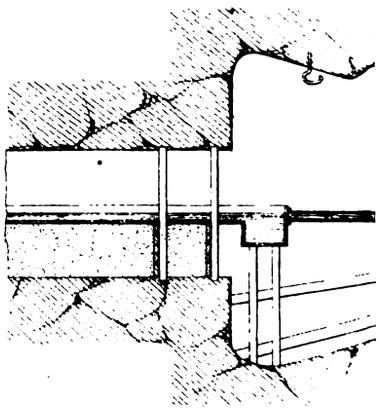
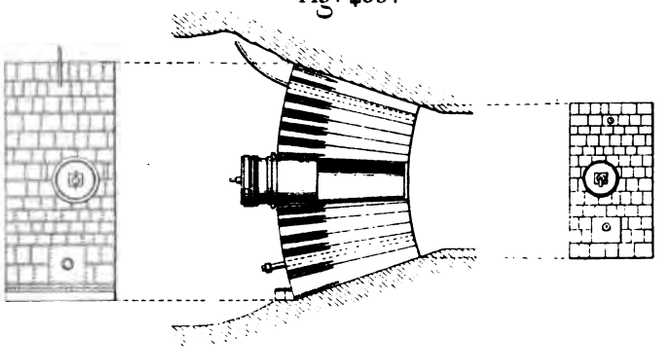


Fig. 405.



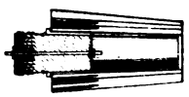
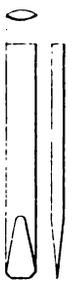
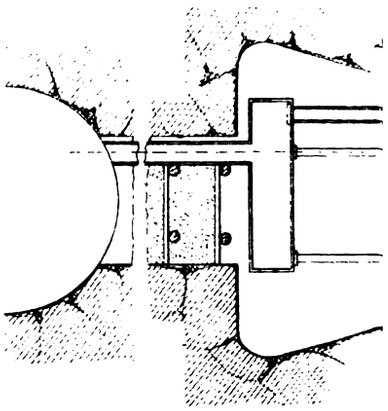


Fig. 405.

Fig. 406.





Echelle de 0m 01 pour 1 mètre.

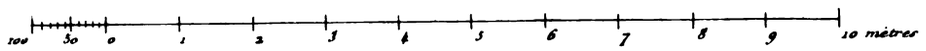


Fig. 401.

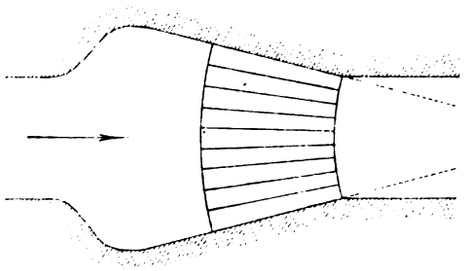


Fig. 402

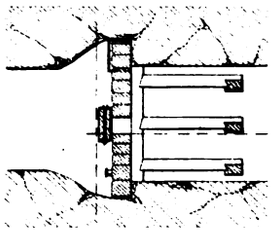
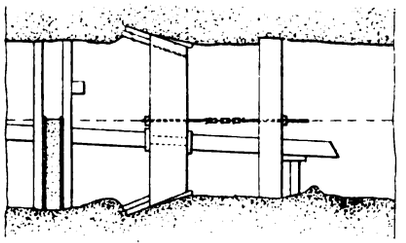


Fig. 403



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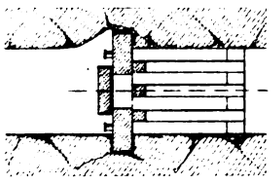

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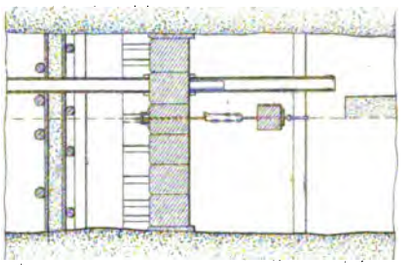

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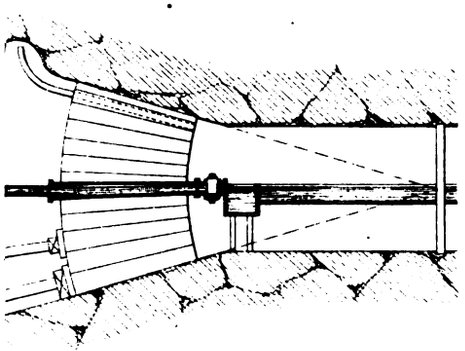

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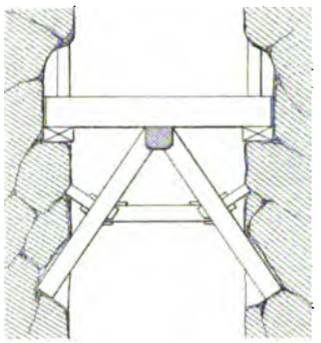

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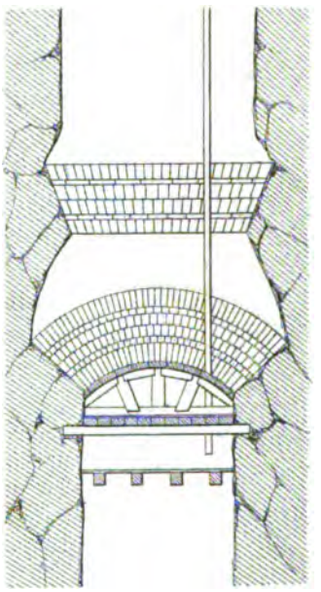
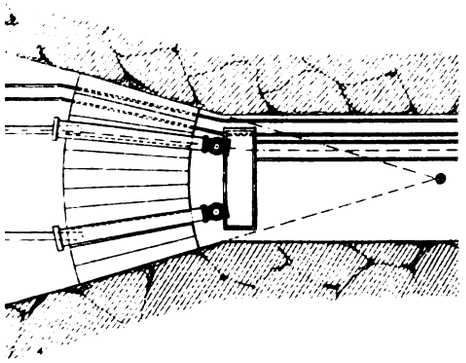


Fig. 406.



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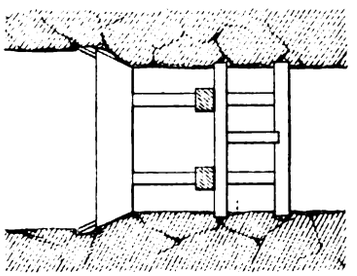

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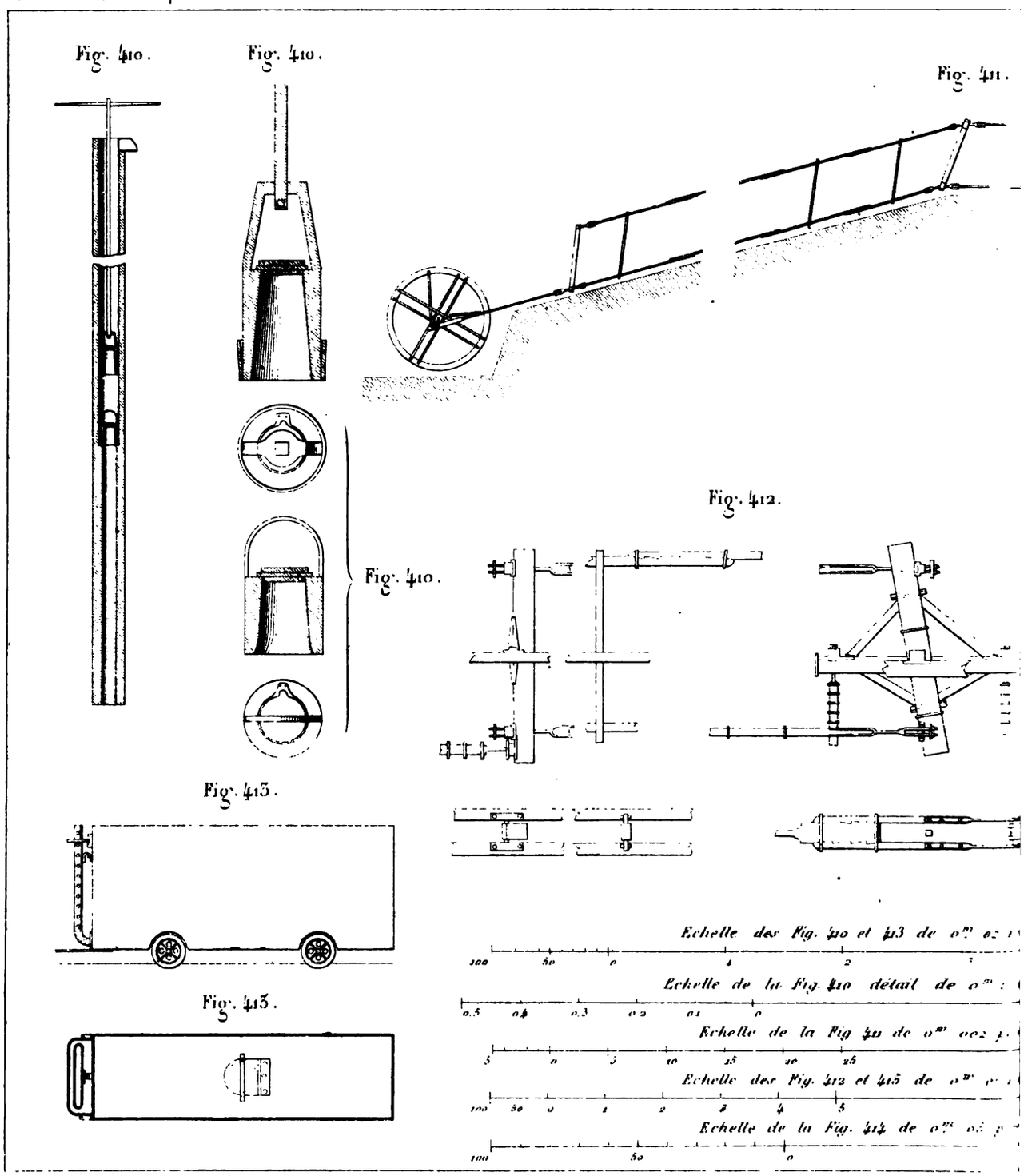


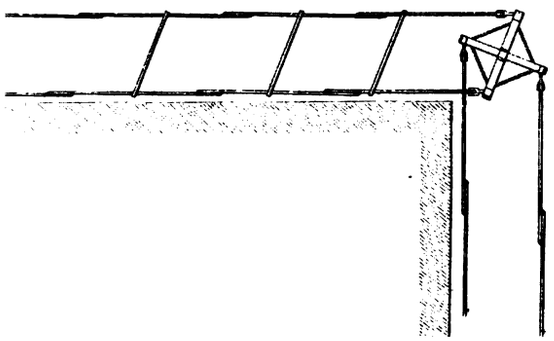
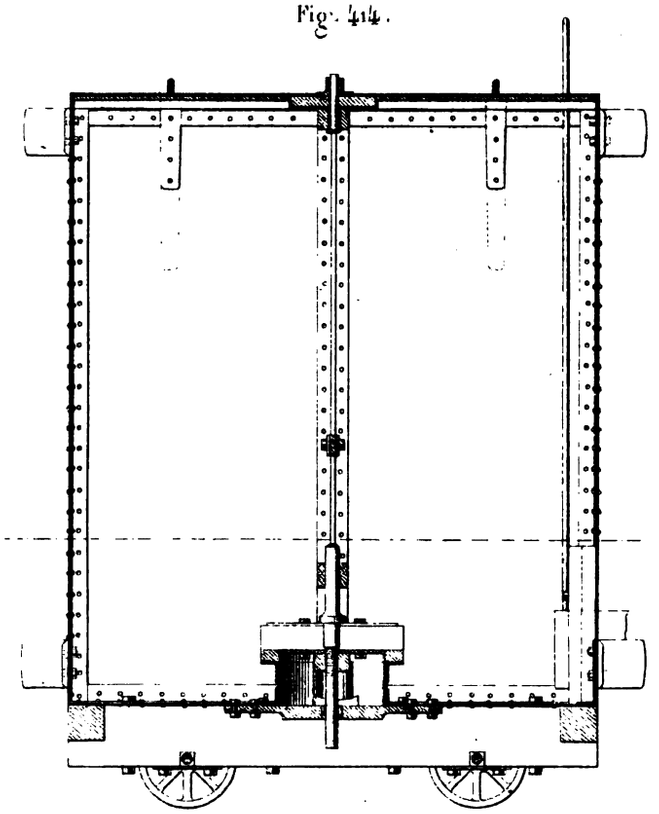


Fig. 415.

Fig. 415.

Fig. 414.



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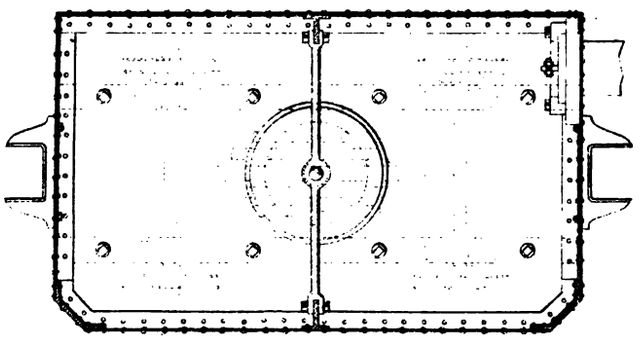
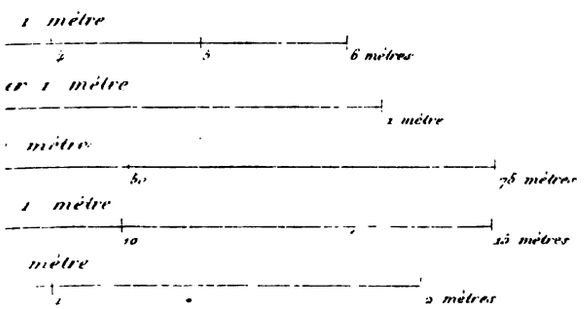
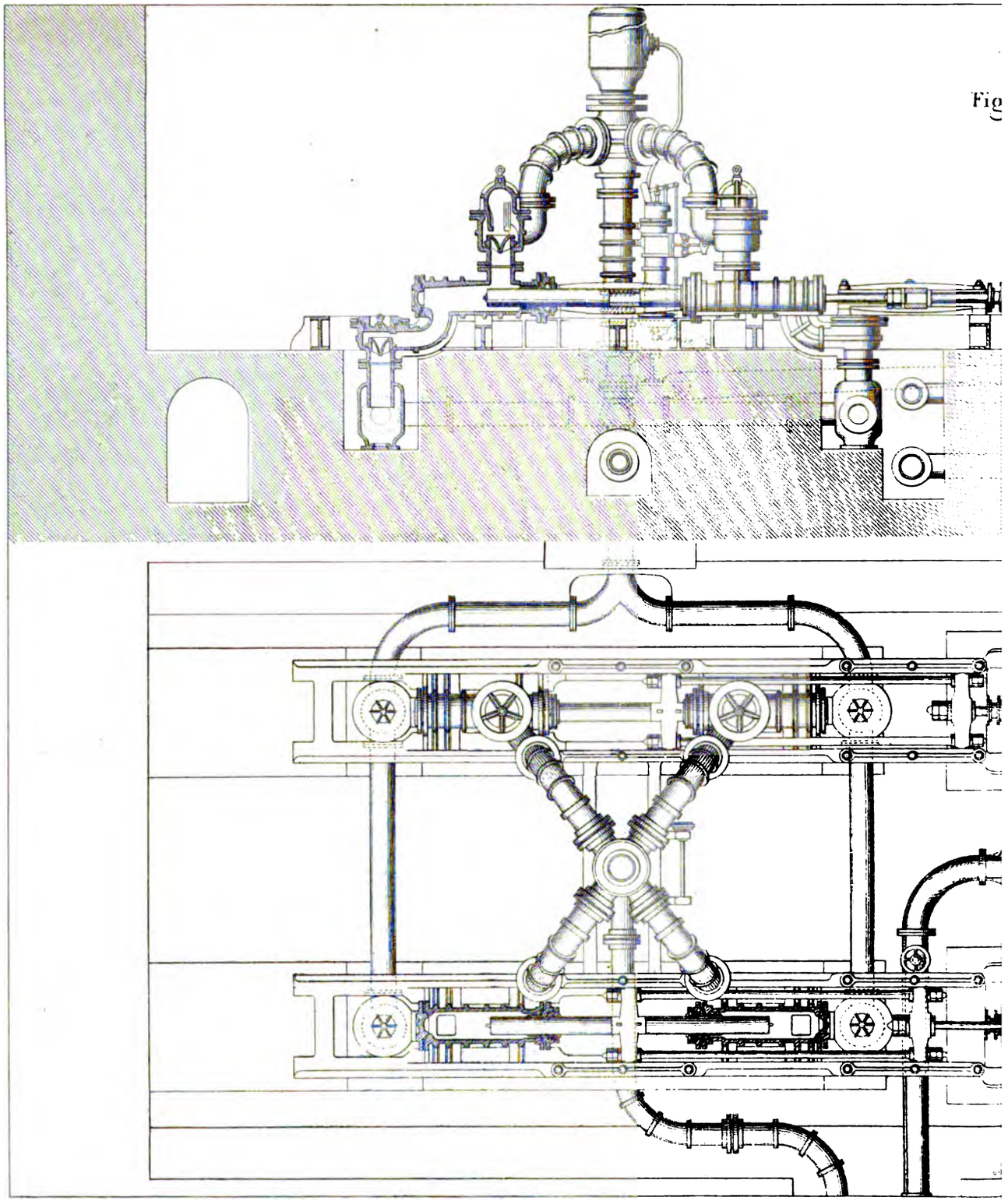
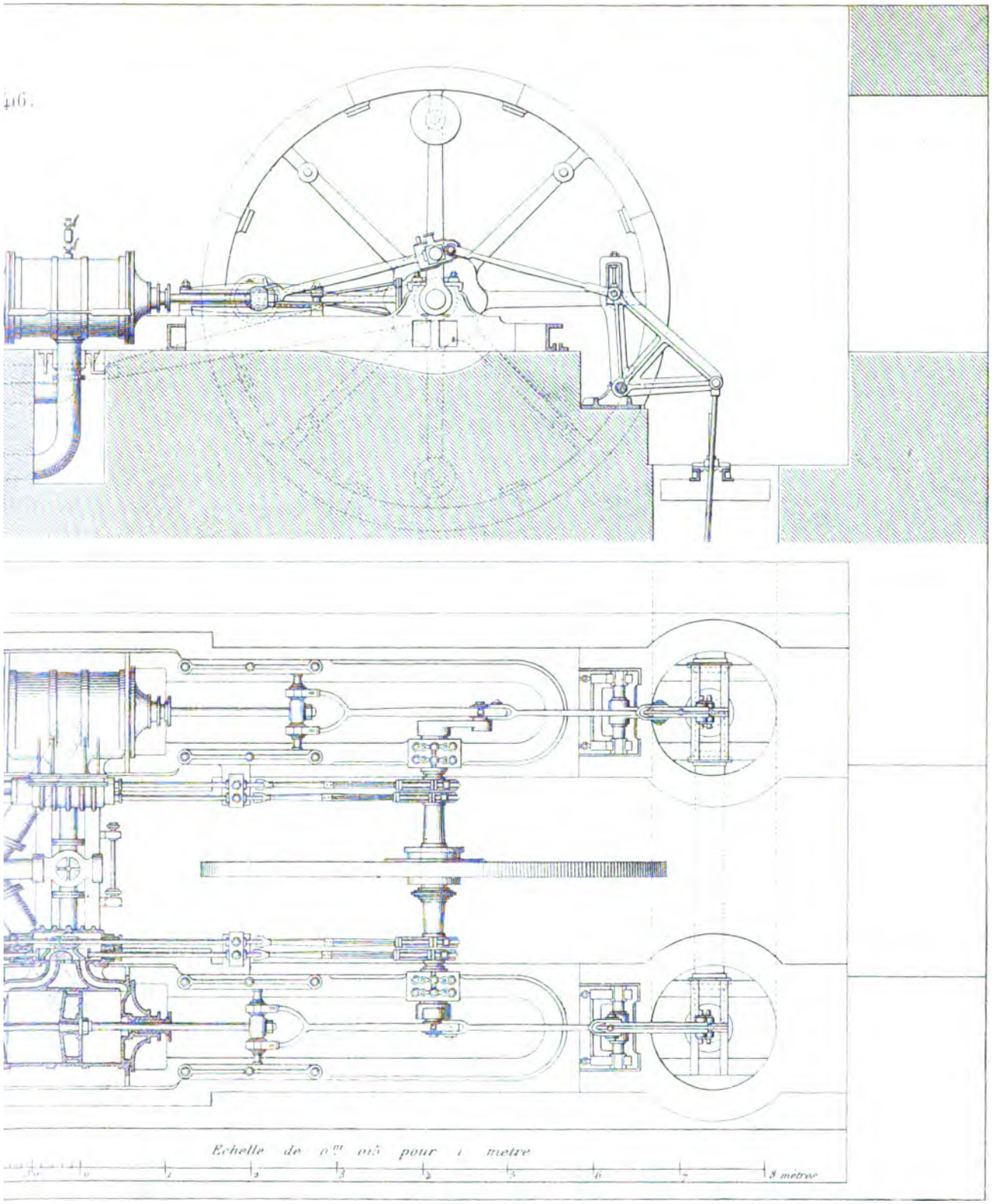




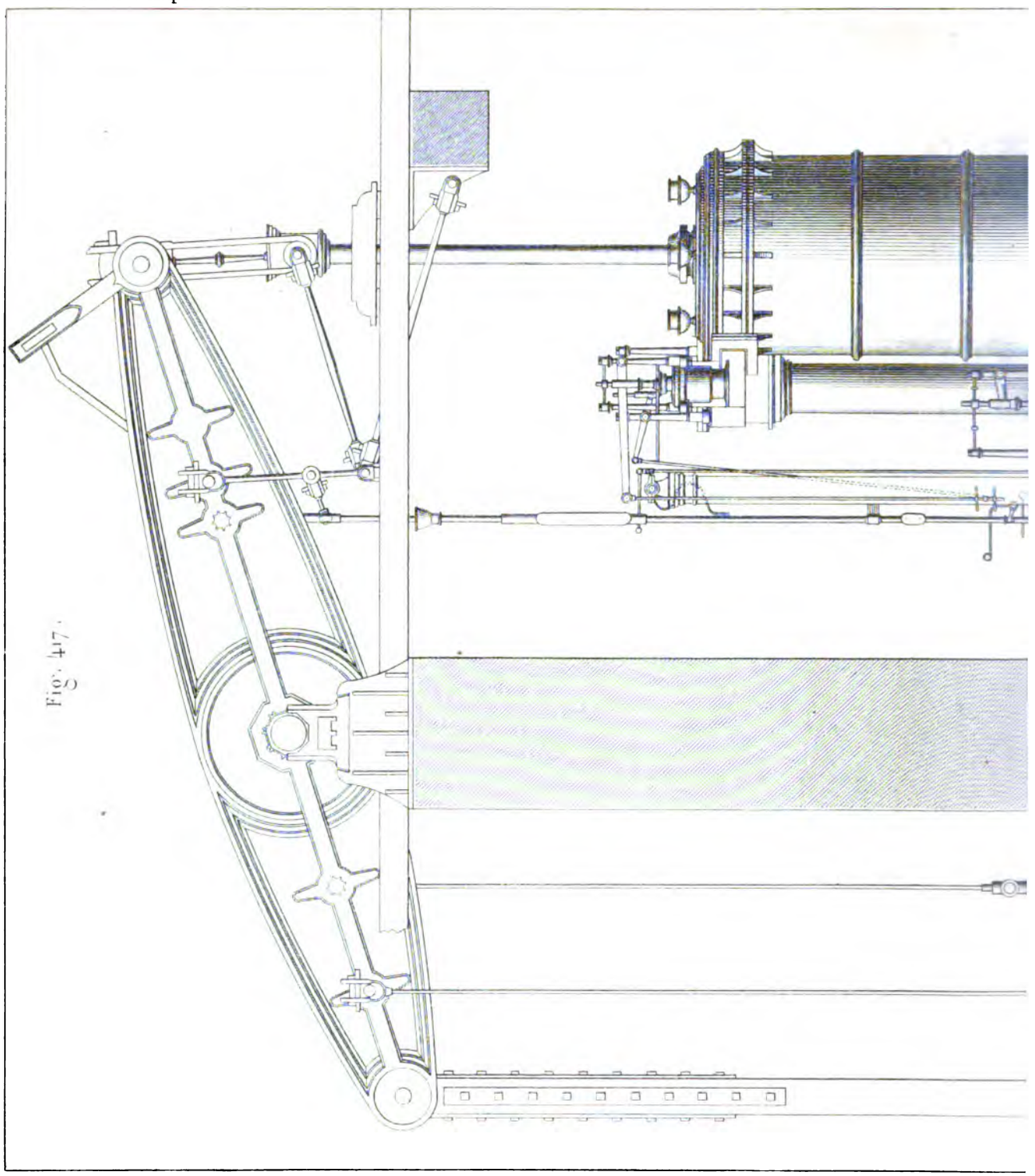
Lemaître del. et sc.



Fig



Lemaître del. et sc.



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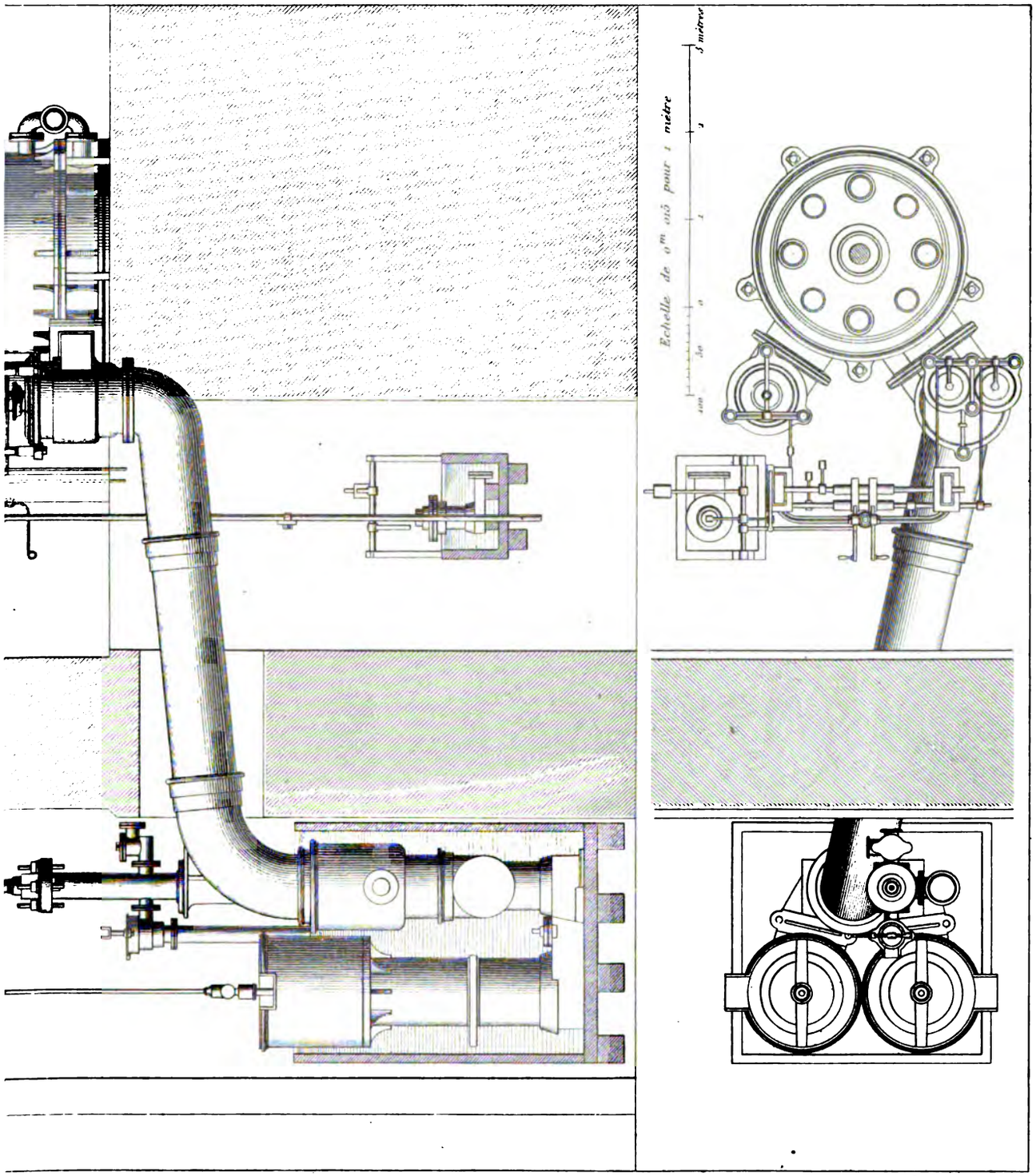

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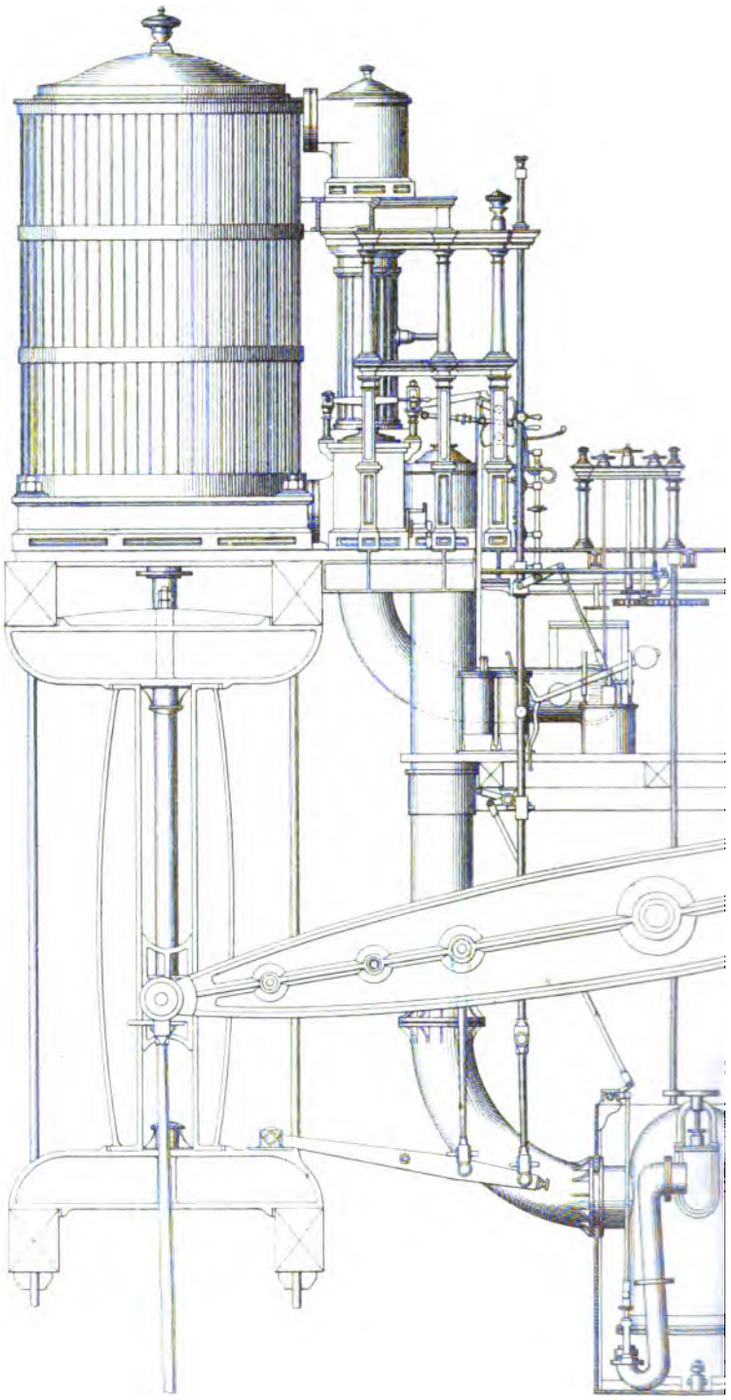

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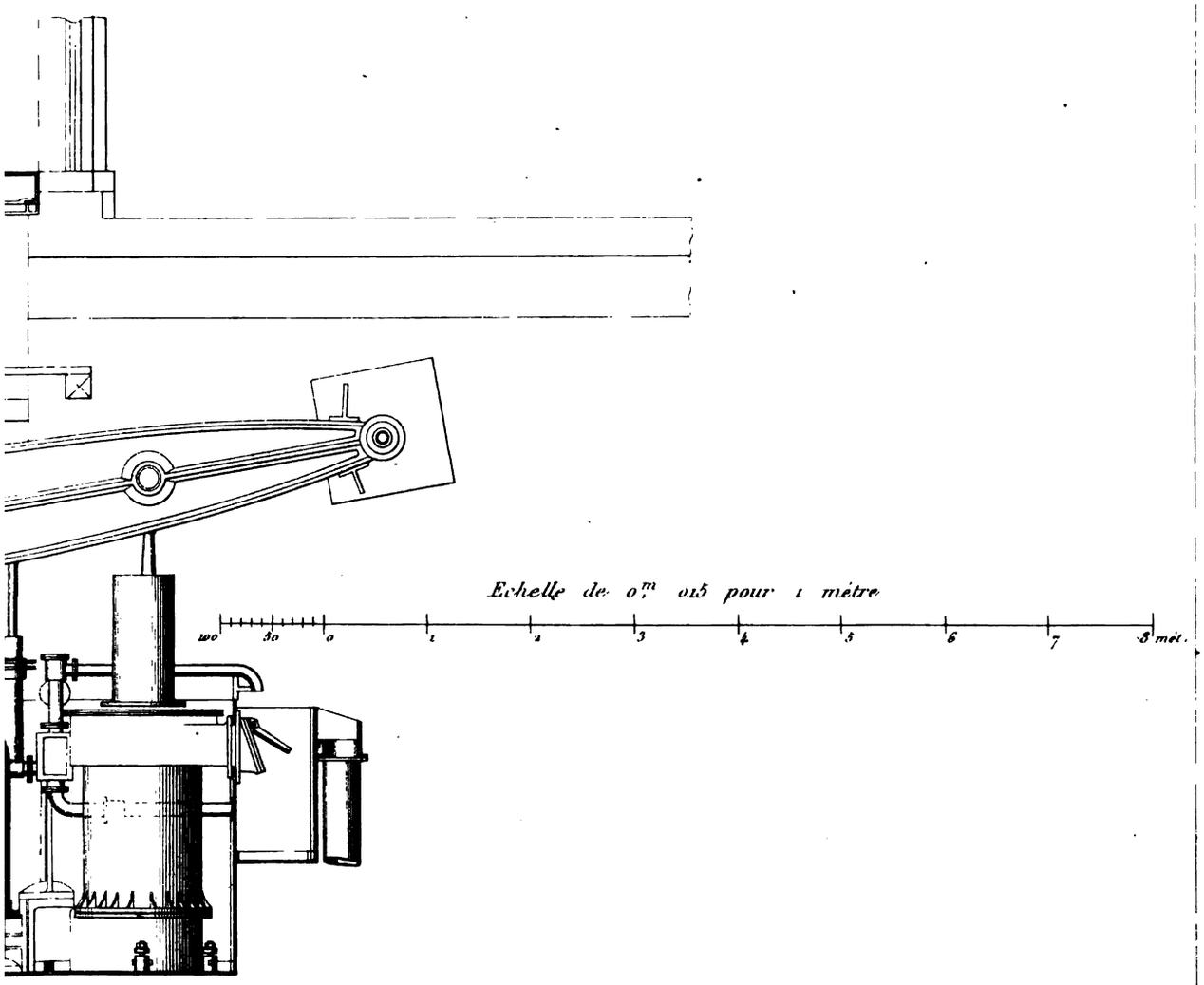

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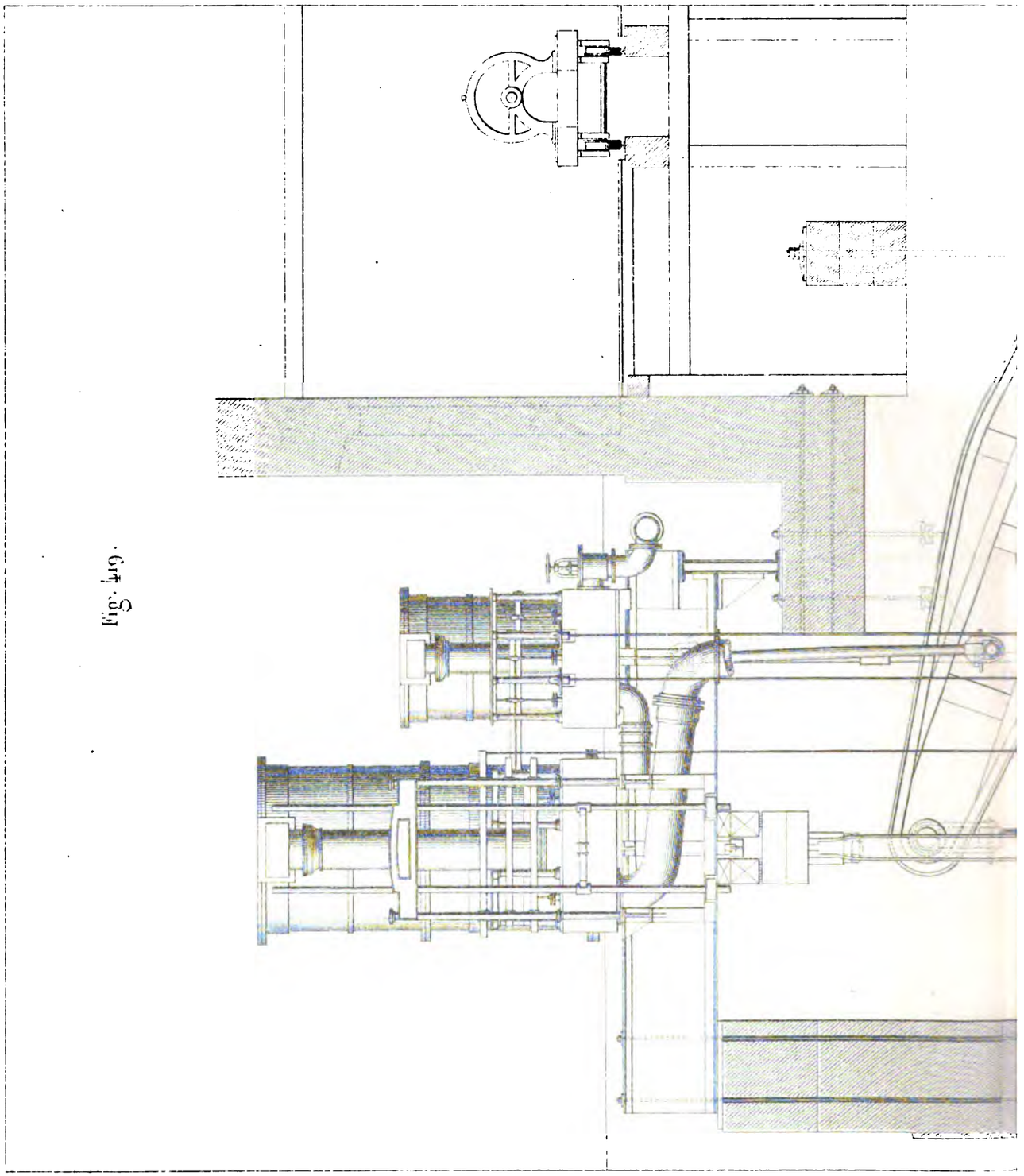
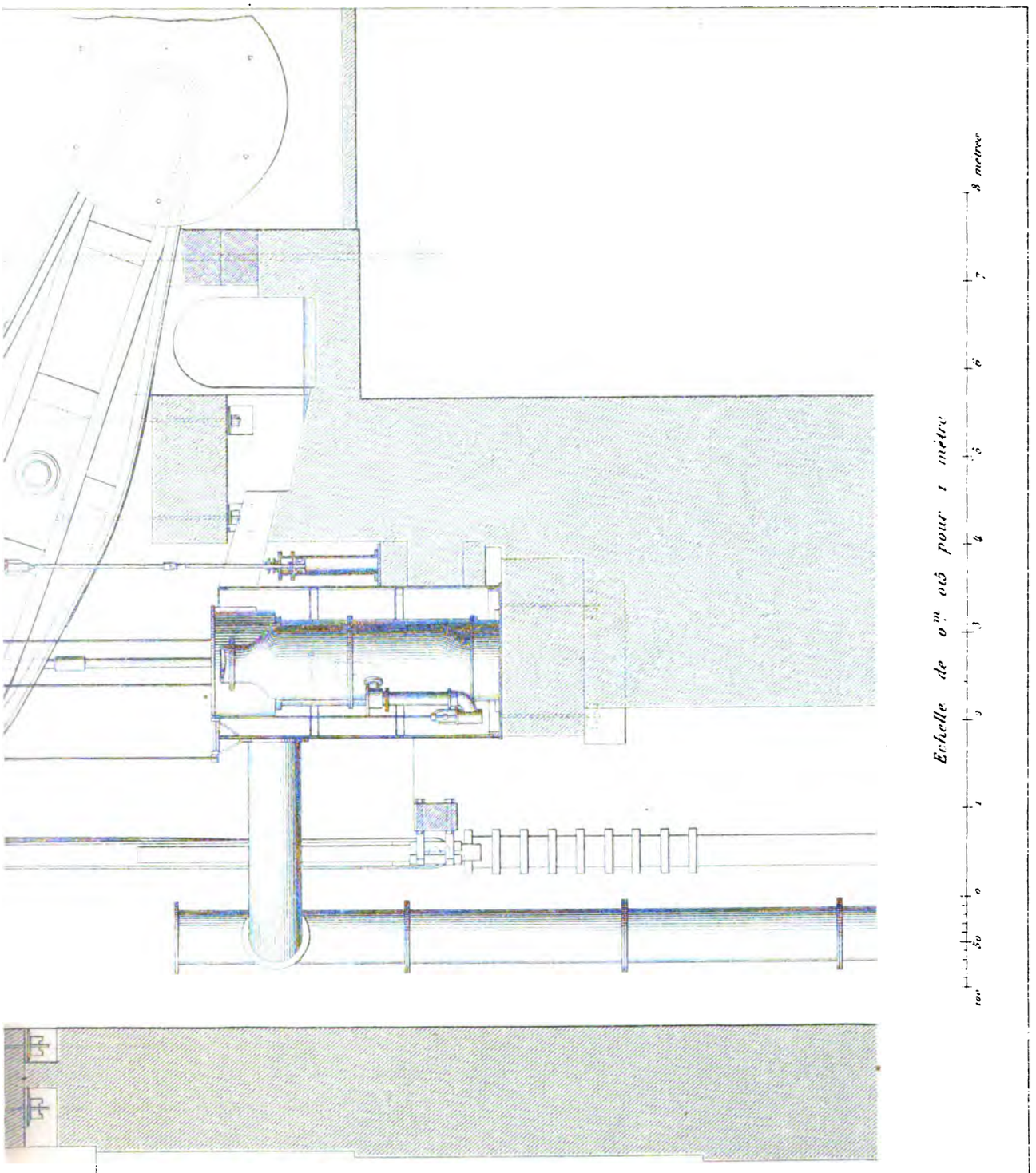


Fig. 419.

ÉPUISEMENT.

Tome II. Pl. LXXXI.



Lemaître del. et sc.

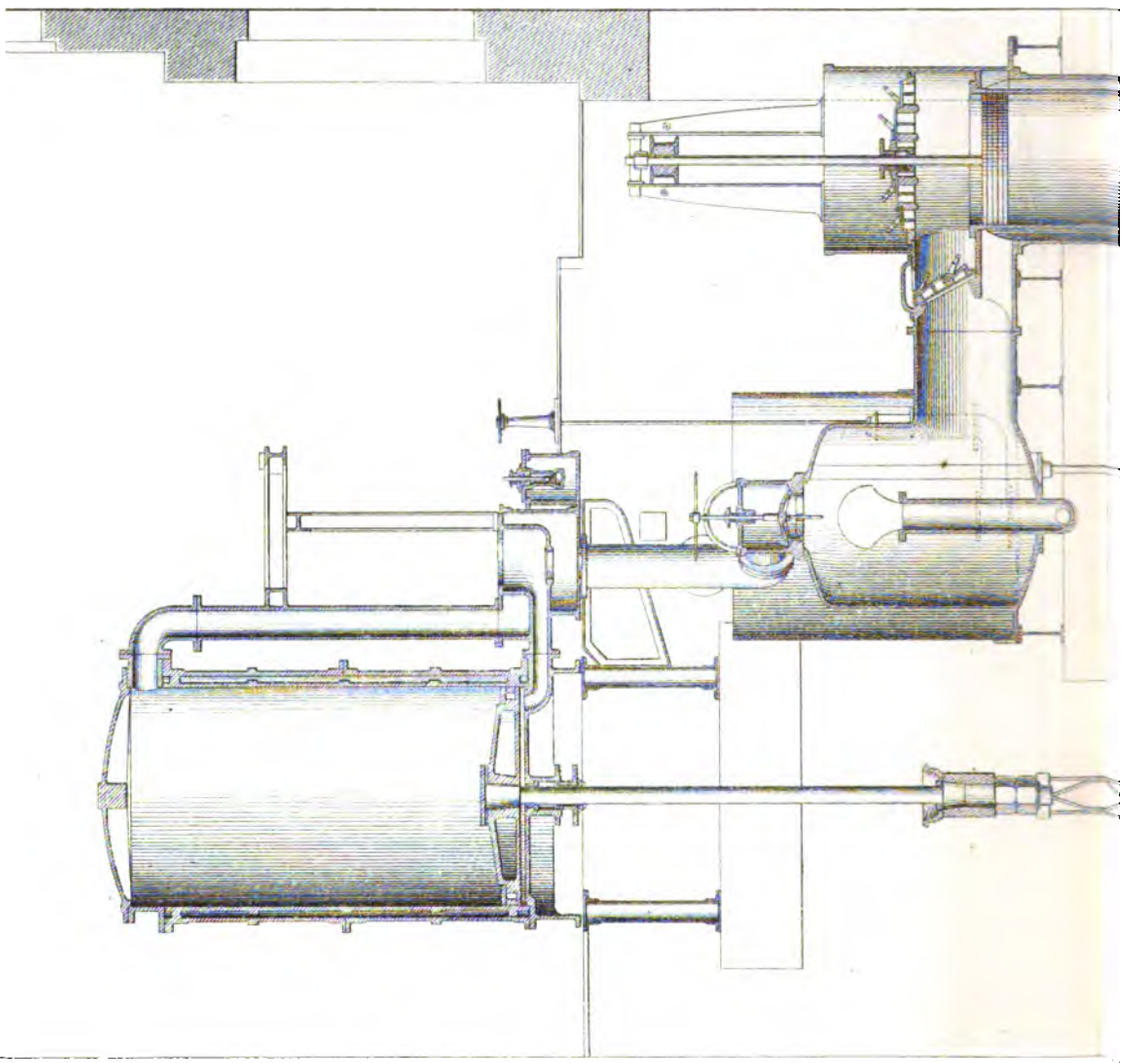


Fig. 420.

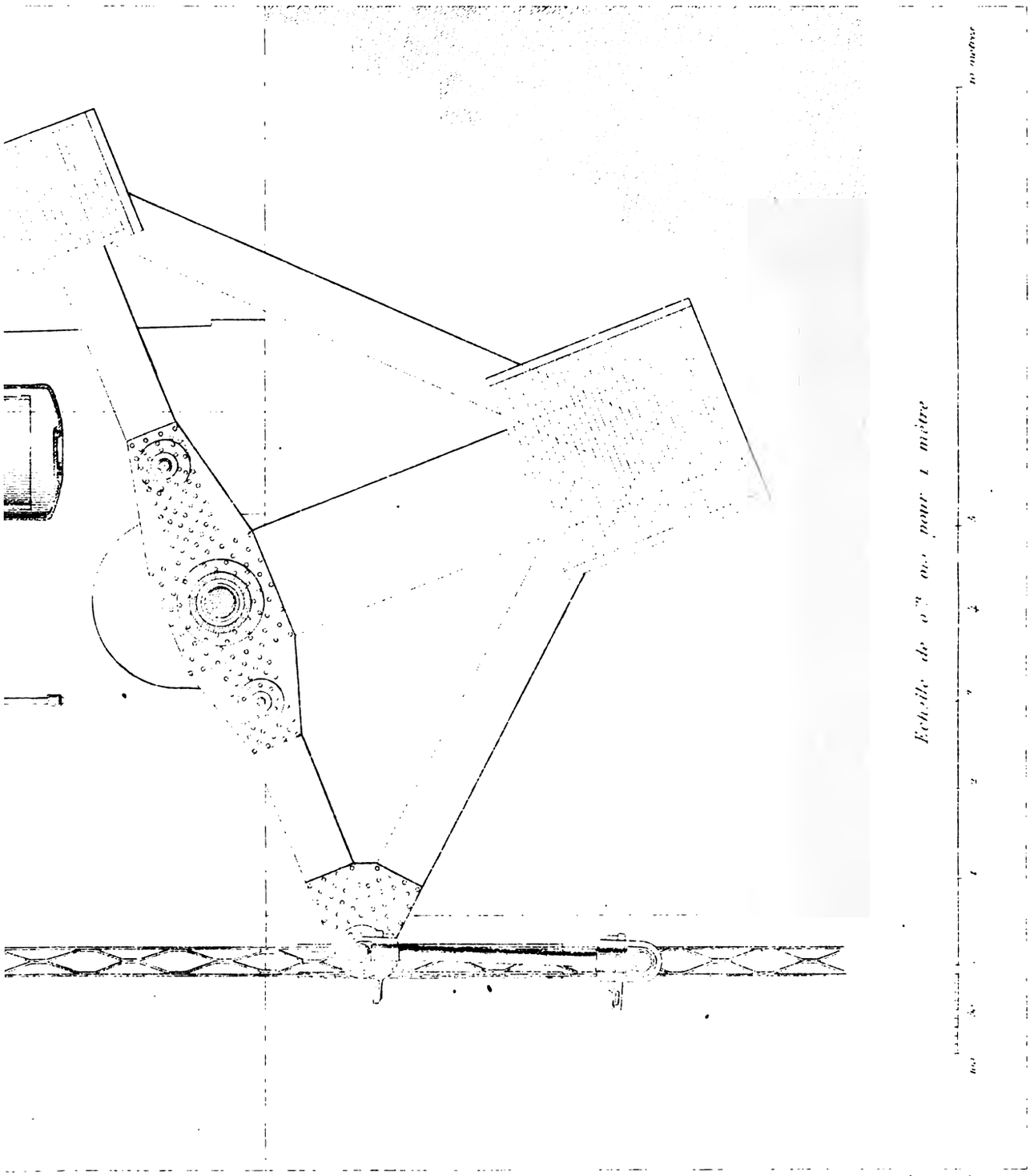


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Fig. 421 A.

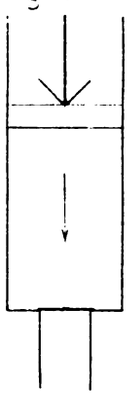


Fig. 421 B.

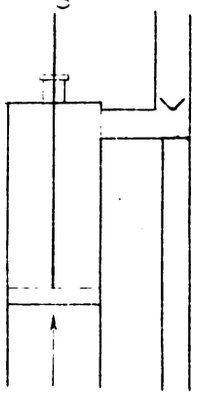


Fig. 421 C.

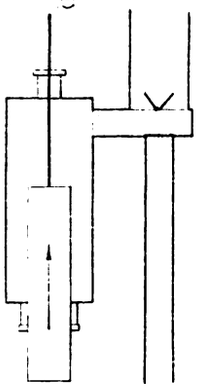


Fig. 421 D.

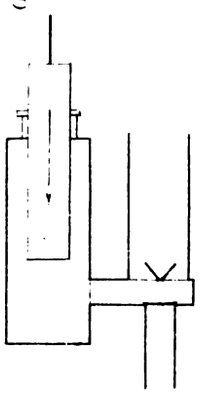
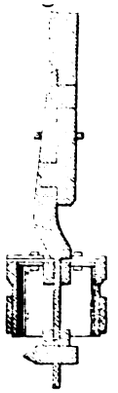


Fig. 422.

Fig. 422.



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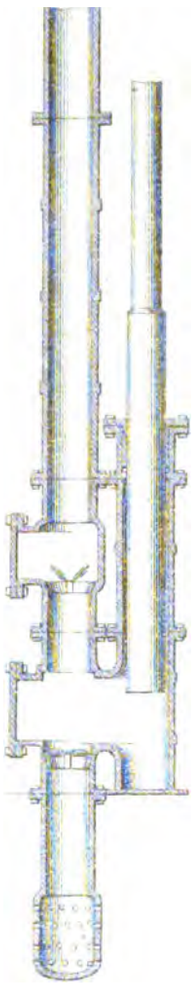

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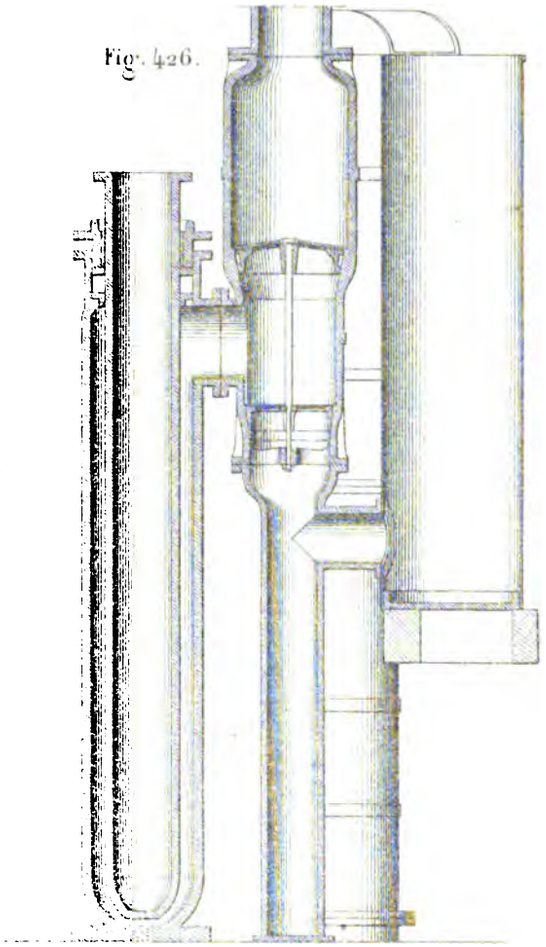


Fig. 422.

Fig. 422.

Fig. 422.

Fig. 427.

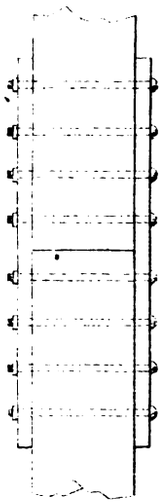
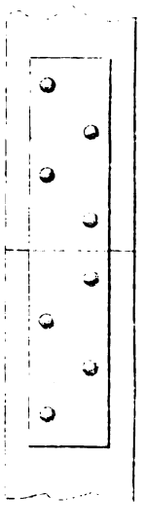


Fig. 427.



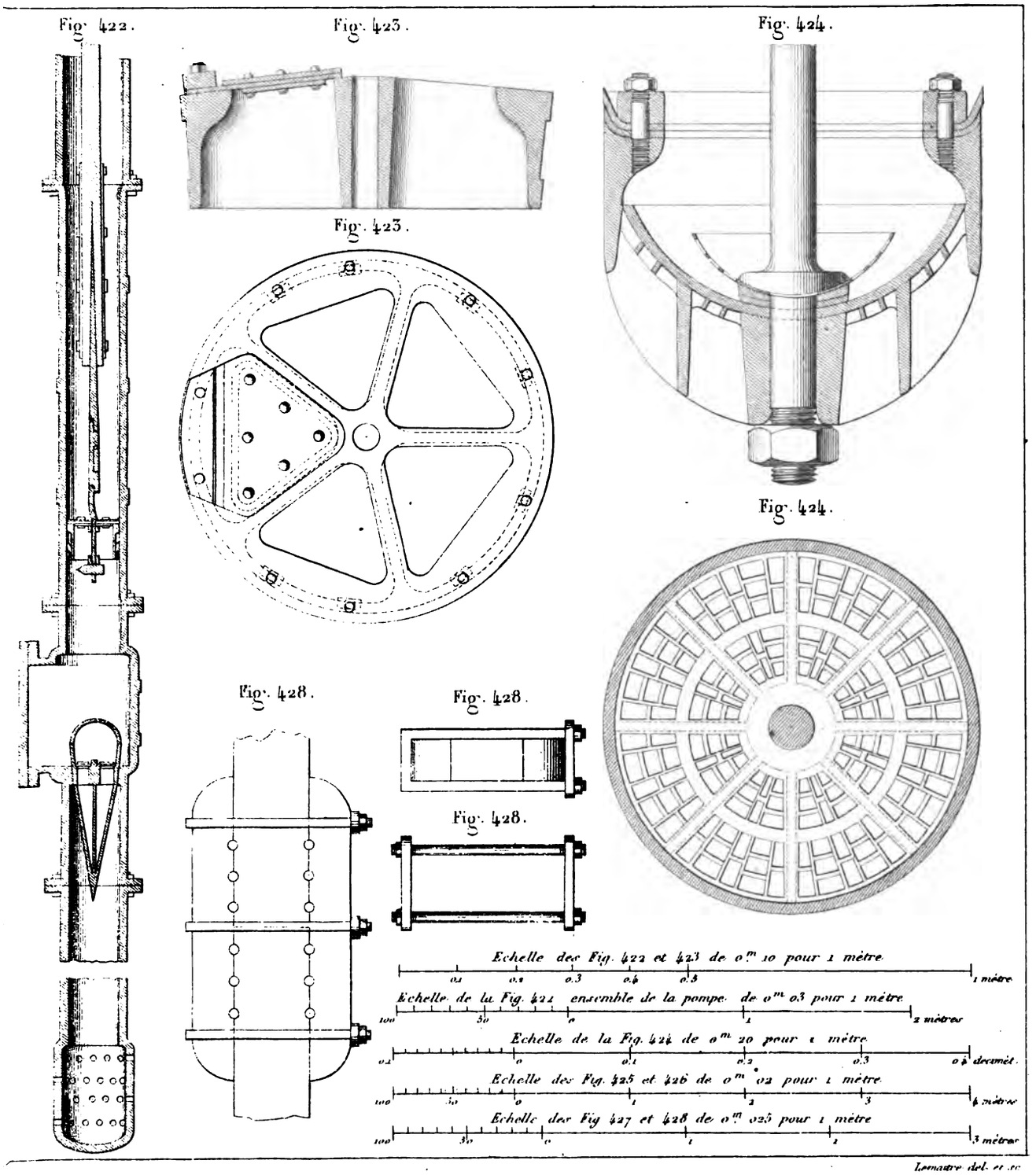


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Fig. 429.

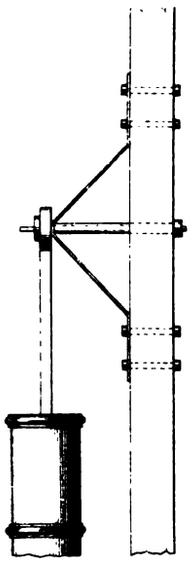


Fig. 430.

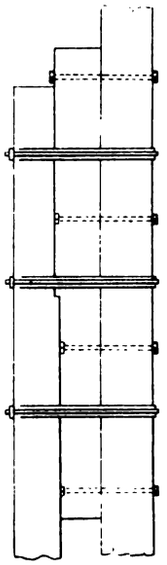
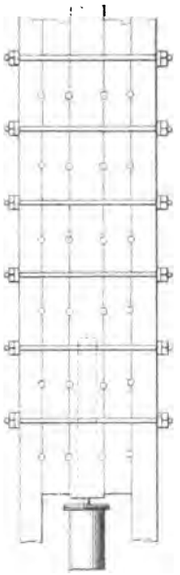


Fig. 431.



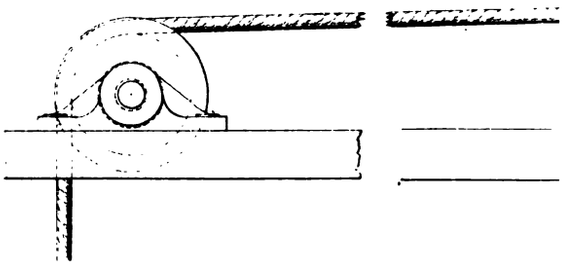


Fig. 434.

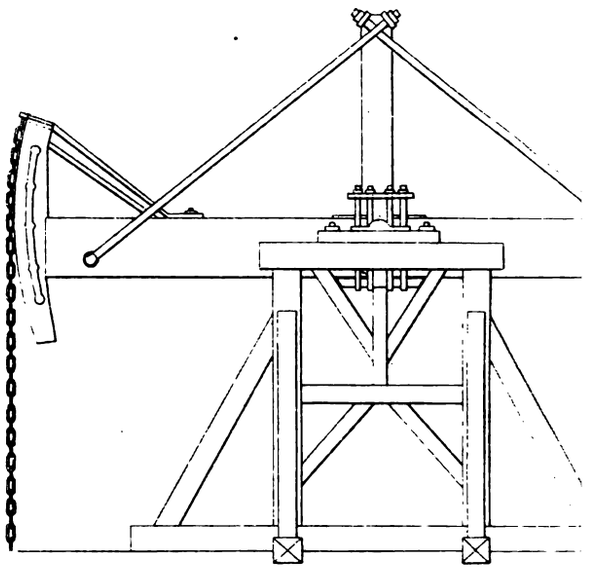


Fig. 432.

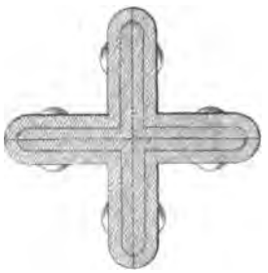


Fig. 433.

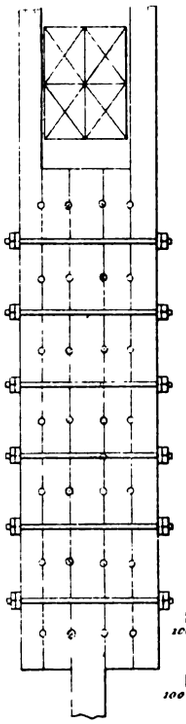
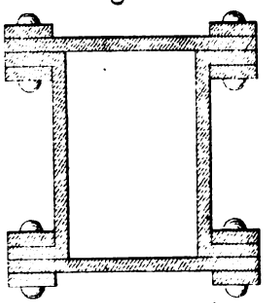
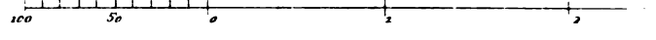


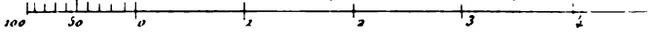
Fig. 432.



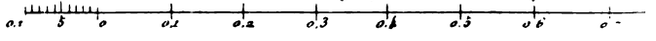
Echelle des Fig. 429, 430 et 435 de 0^m 025 pour 1 me



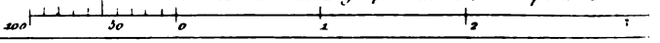
Echelle de la Fig. 431 de 0^m 015 pour 1 mètre



Echelle de la Fig. 432 de 0^m 10 pour 1 m



Echelle de la Fig. 433 de 0^m 02 pour 1 mèt



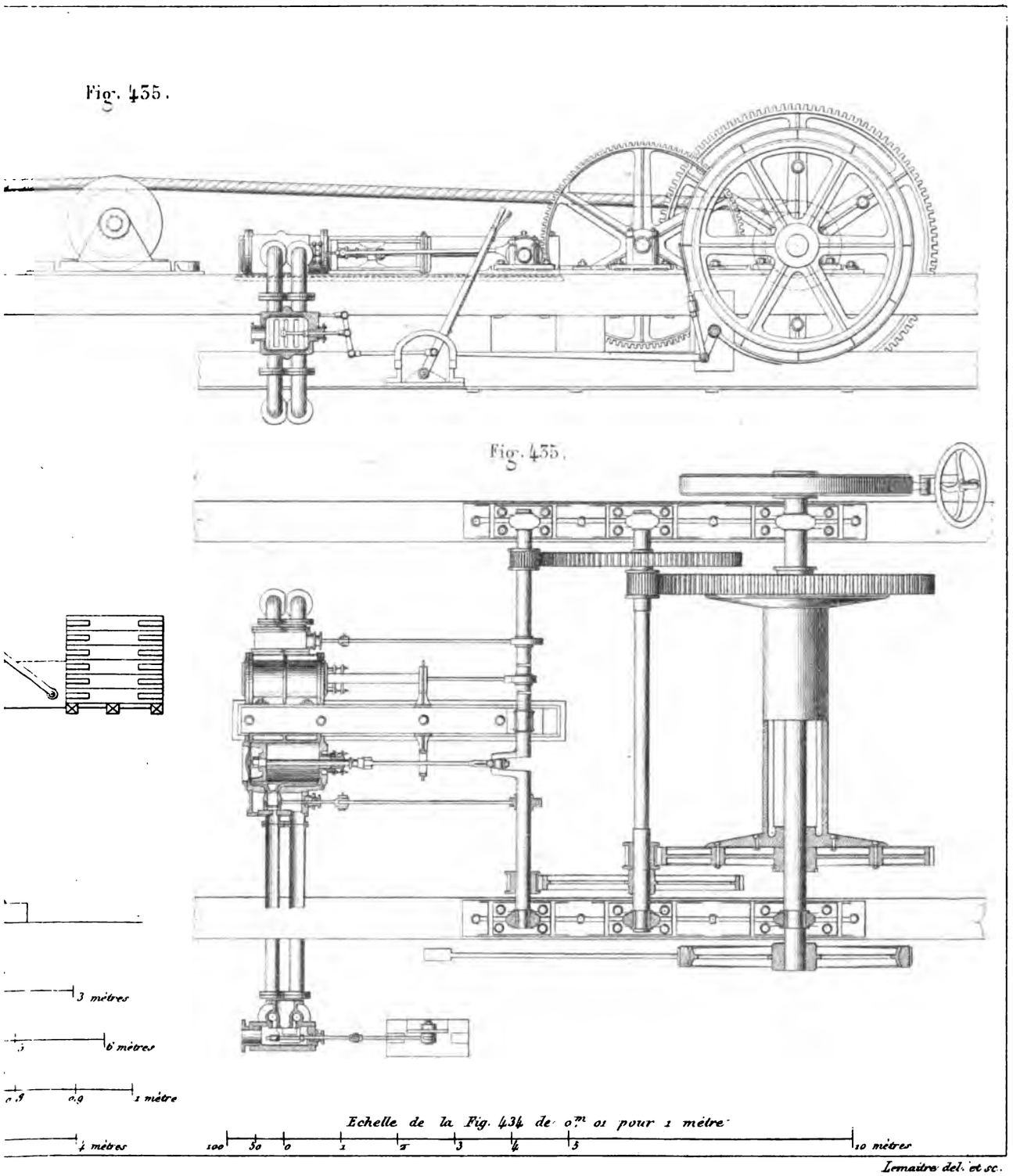


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Fig. 436.

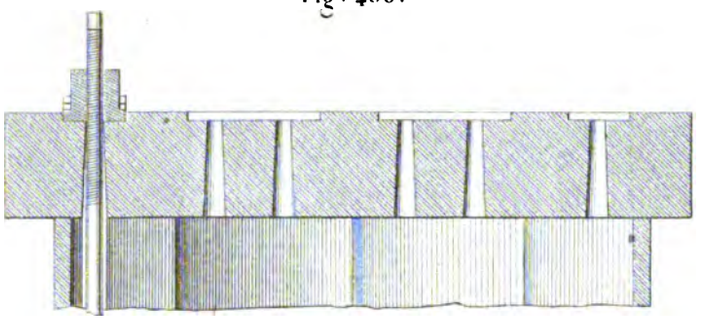


Fig. 436.

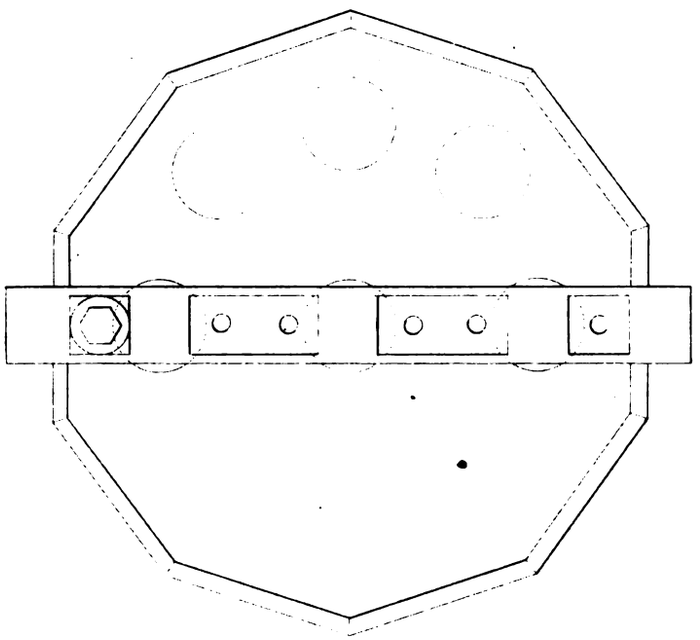


Fig. 437.

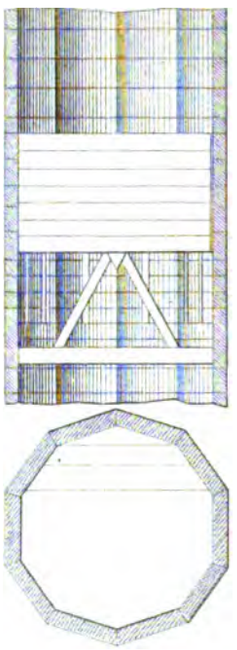
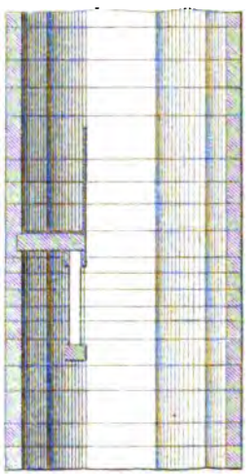


Fig. 437.



Echelle de la Fig. 436 de 0.m 02 pour 1 mètre

100 50 0 1 2 3 4 mètres

Echelle des Fig. 437 et 438 de 0

100 50 0 1 2 3 4

Fig. 438.

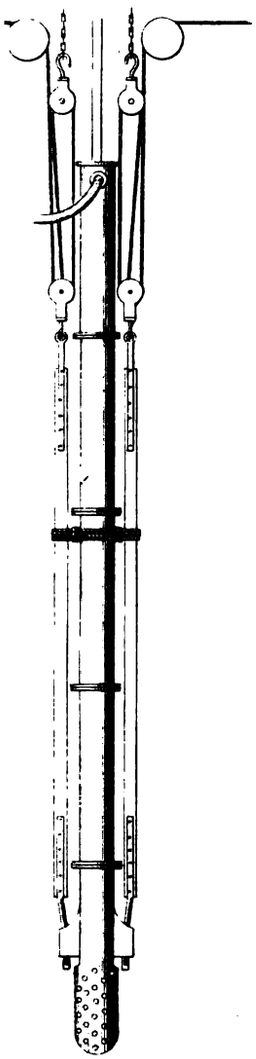


Fig. 439.

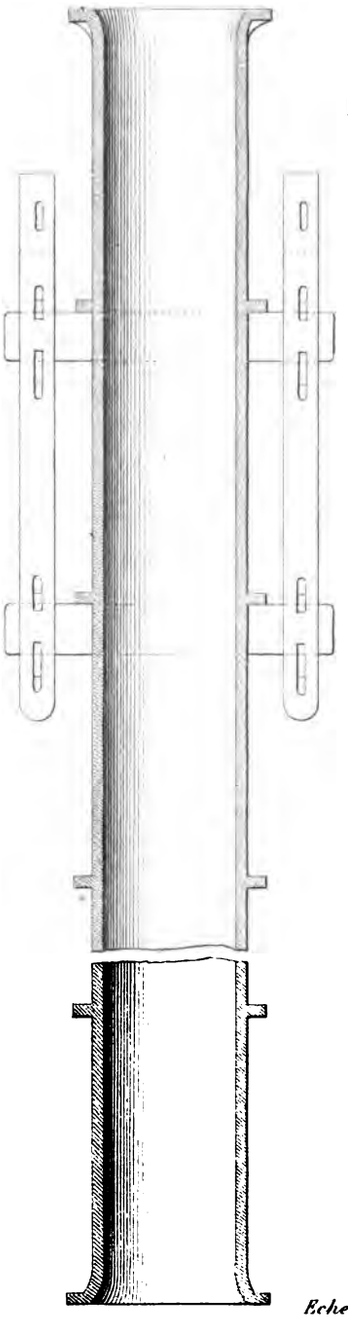


Fig. 439.

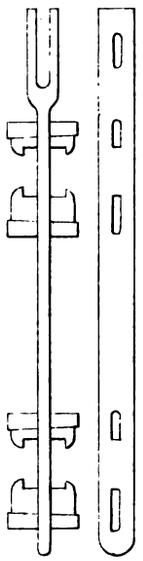


Fig. 439.

Fig. 439.

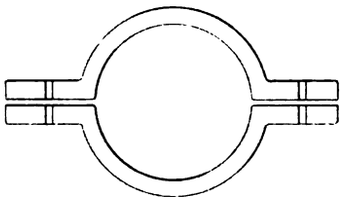


Fig. 439.

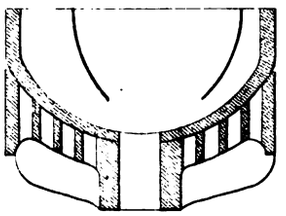
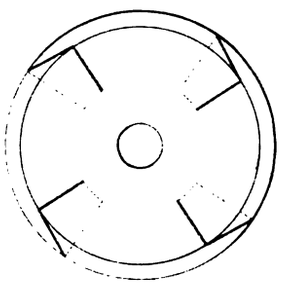


Fig. 439.



m. 01 pour 1 mètre

5 6 7 8 mètres

Echelle de la Fig. 439 de 0m. 03 pour 1 mètre

100 50 0 1 2 3 m.

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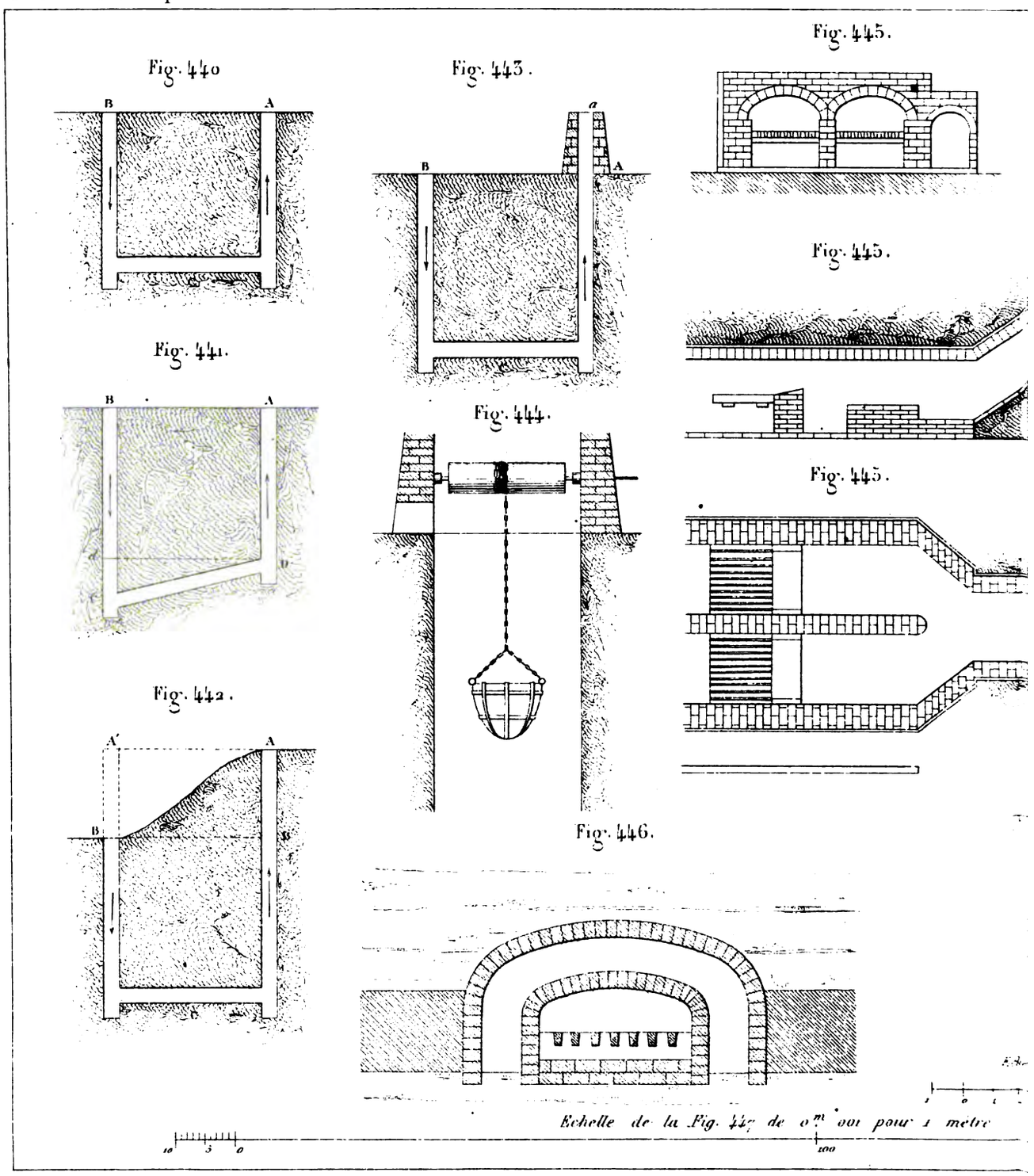
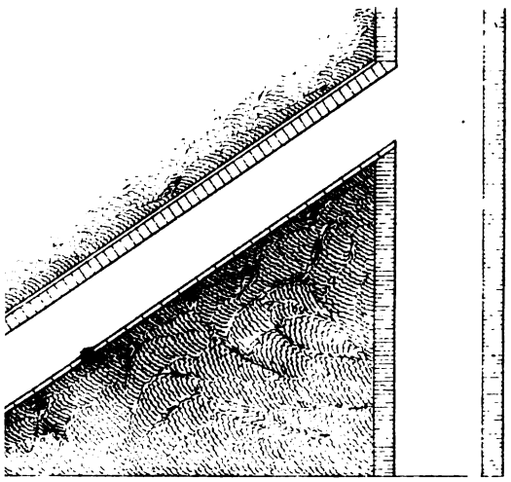


Fig. 440
B
A
Fig. 441.
B
A
Fig. 442.
A'
A
B
B
Fig. 443.
a
B
A
Fig. 444.
Fig. 445.
Fig. 445.
Fig. 445.
Fig. 446.
Echelle de la Fig. 447 de 0m.001 pour 1 mètre
10
5
0
100

Fig. 447.



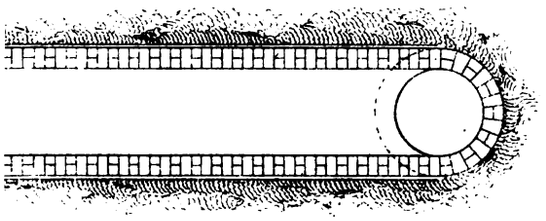
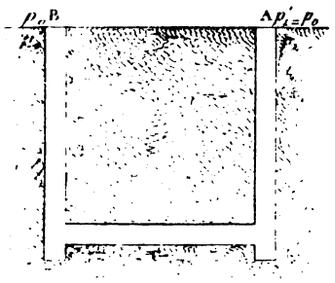
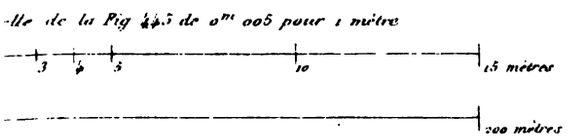
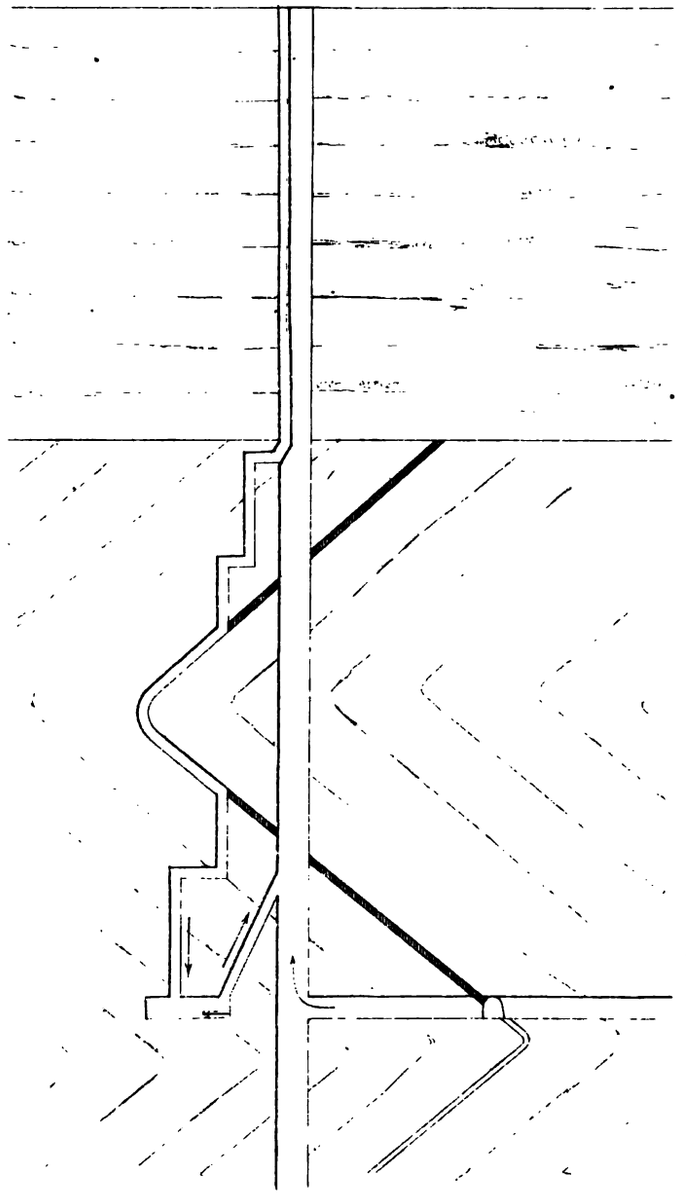


Fig. 448.







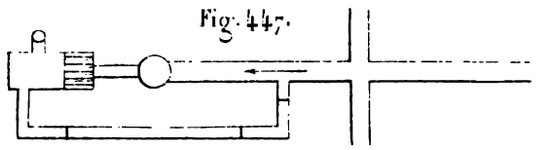


Fig. 447.

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Fig. 449.

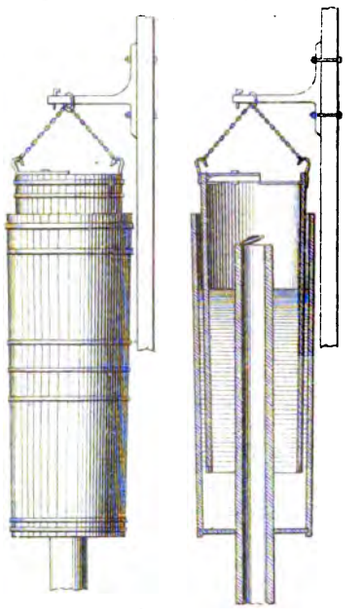
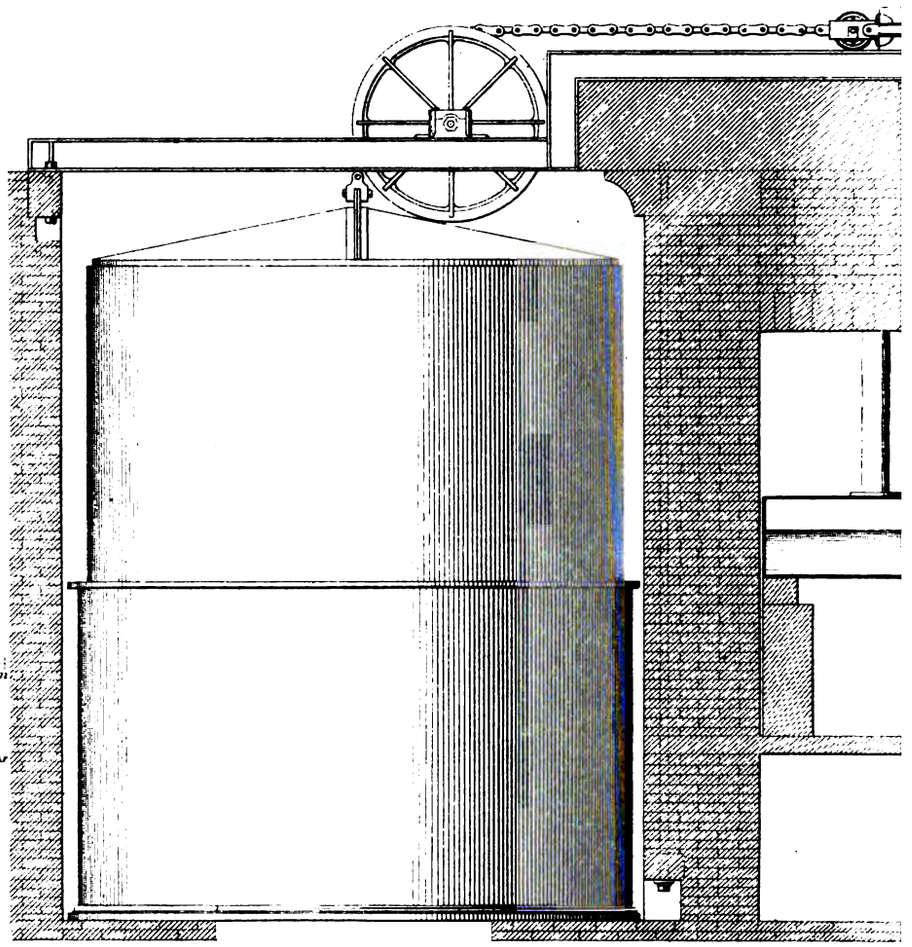


Fig. 449.



Echelle de la Fig. 449 de o^{m} 025 p^{r} 1 mètre

100 50 0 1 m.

Echelle de la Fig 450 de o^{m} 05 p^{r} 1 mètre

100 50 0 1 2 mètres

Echelle de la Fig. 451 de o^{m} 02 p^{r} 1 mètre

100 50 0 1 mètre

Fig. 450.

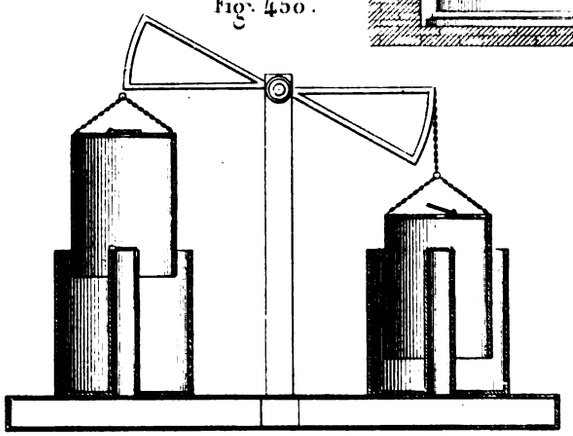


Fig. 451 bis

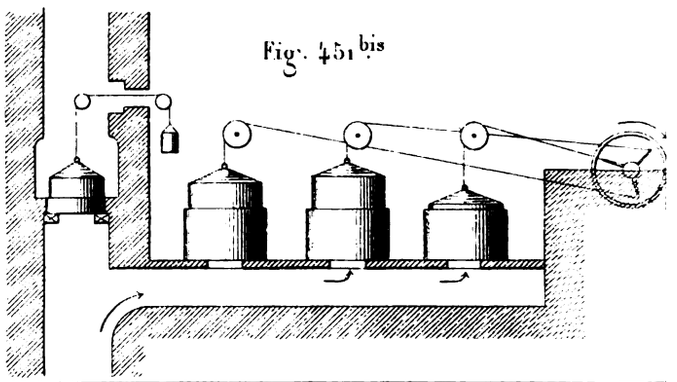


Fig. 451.

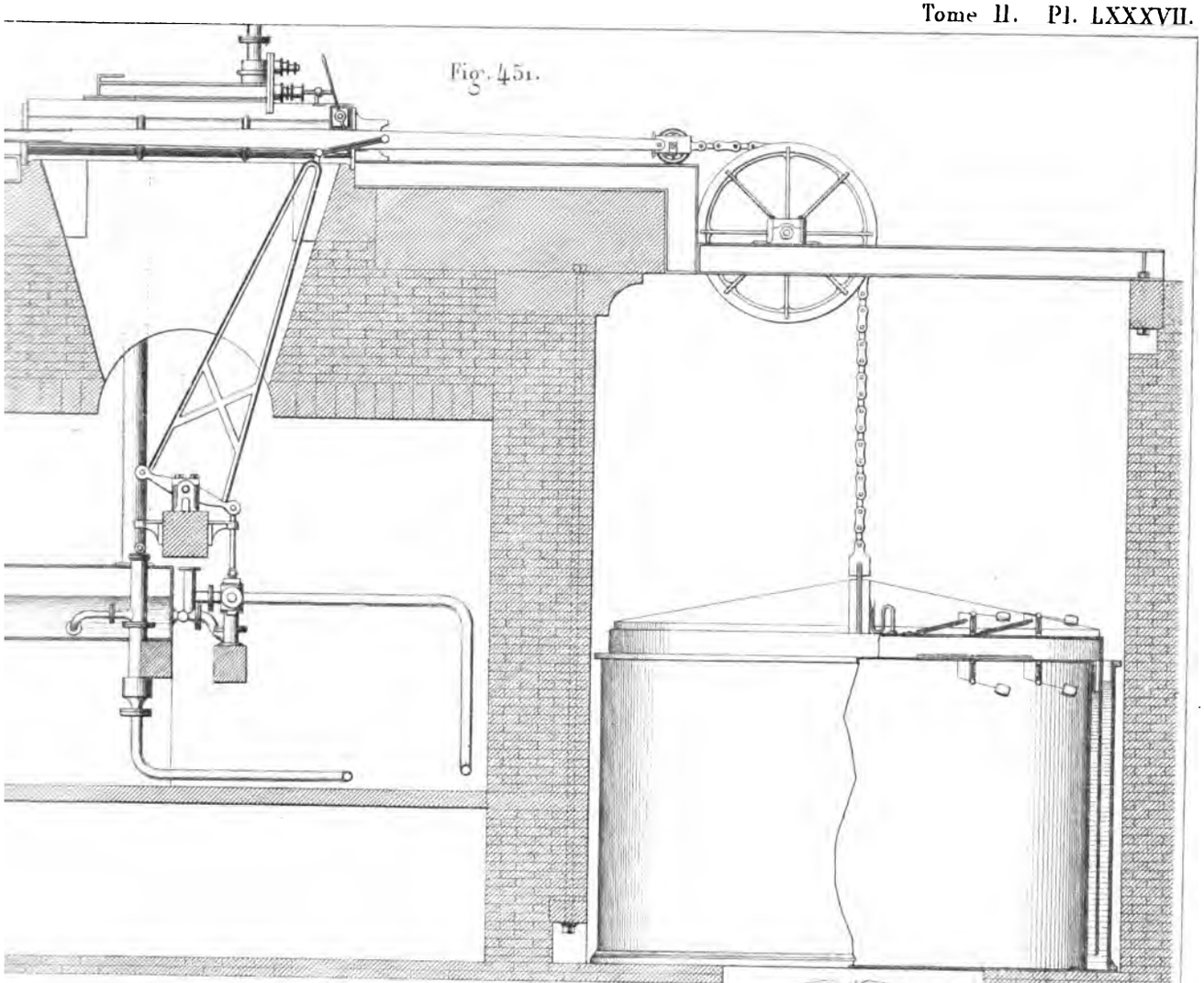


Fig. 451.

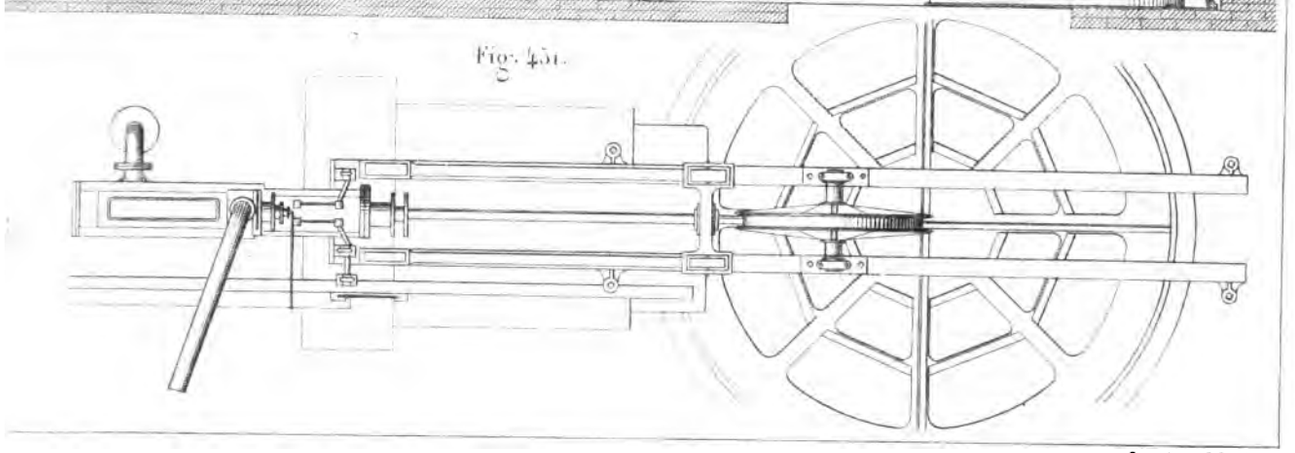


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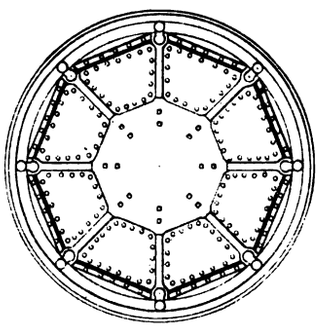
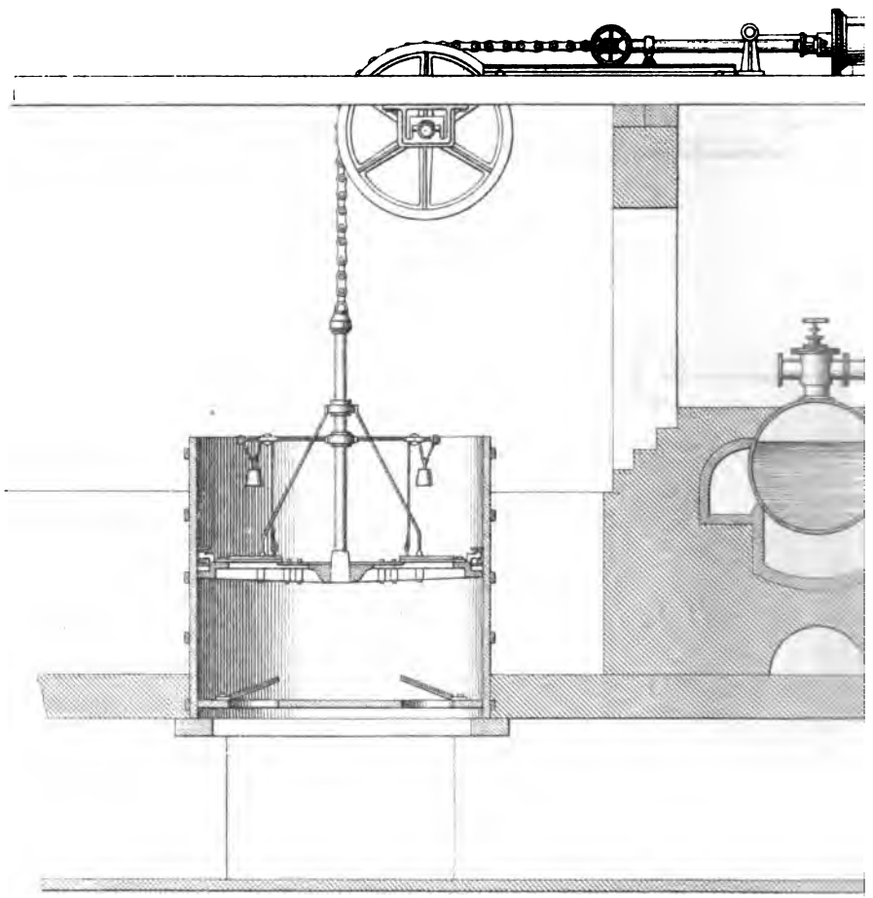
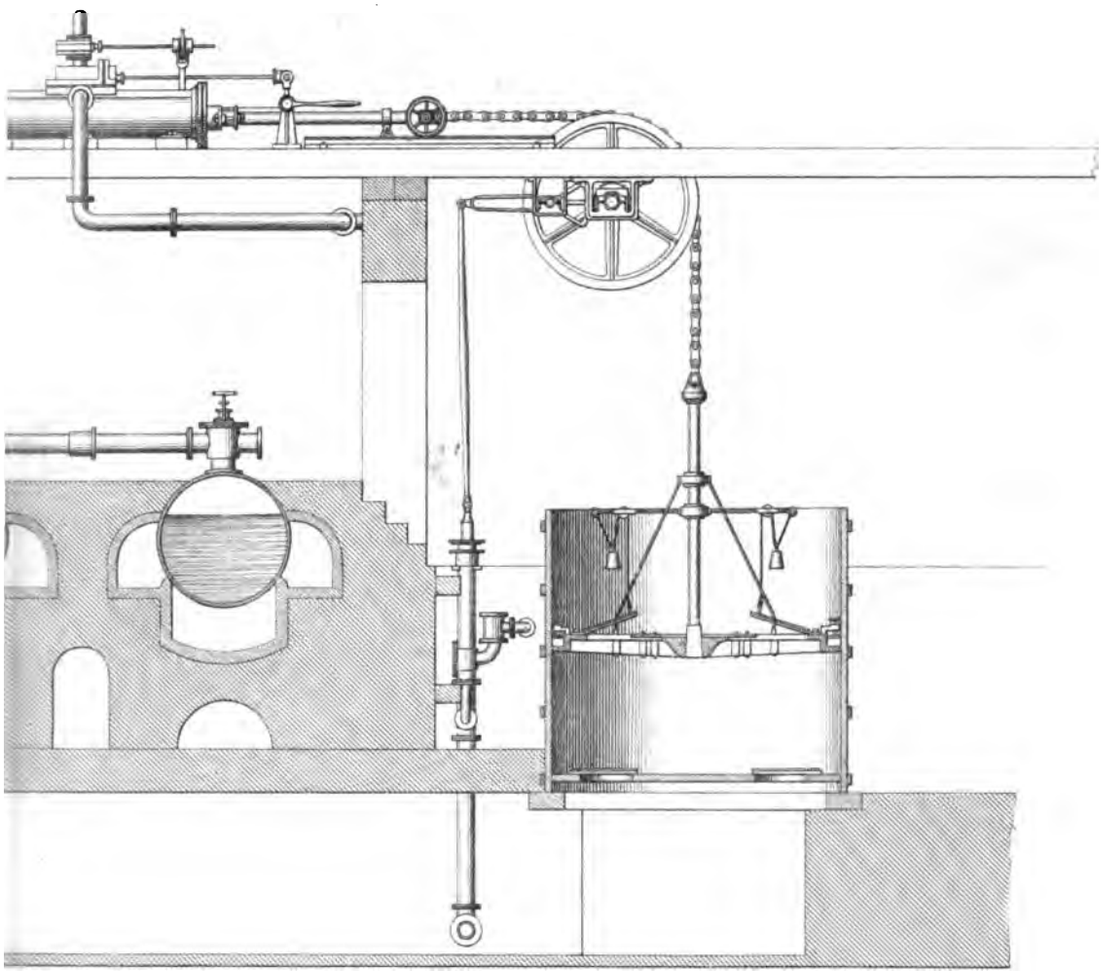
Fig. 2





Echelle

452.



o^m. 015 pour 1 mètre

3 4 5 6 7 8 mètres

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Fig. 453

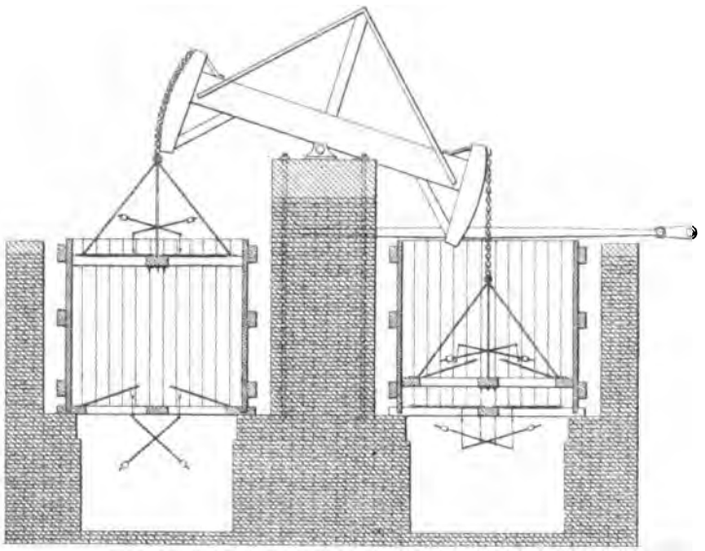


Fig. 455 A

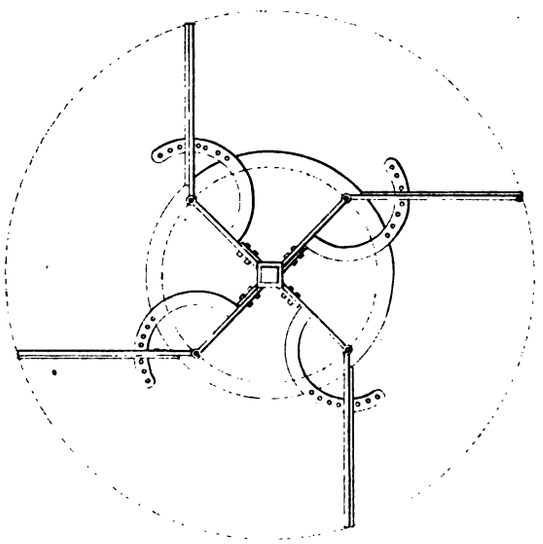


Fig. 454.

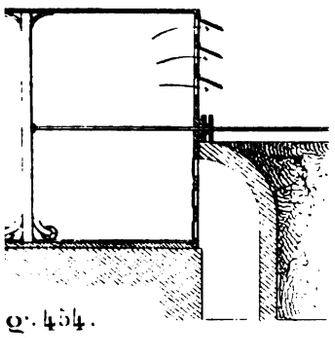


Fig. 454.

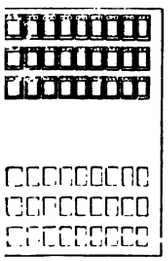


Fig. 455 A

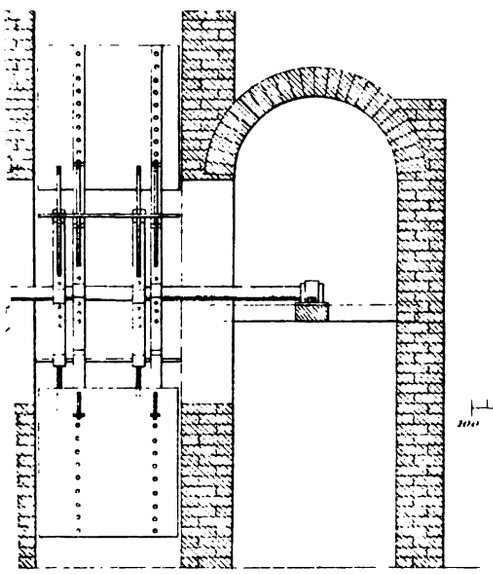


Fig. 455 B.

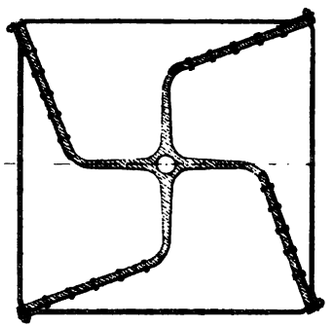


Fig. 456.

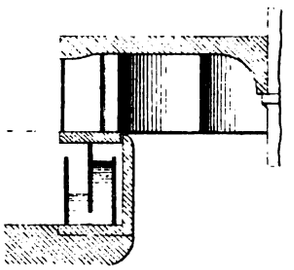
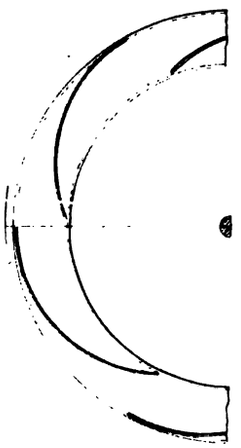
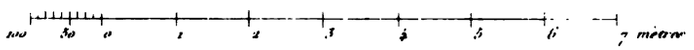


Fig. 456.



Echelle de la Fig. 453 de o^{m} 01 pour 1 mètre



Echelle des Fig. 454 de o^{m} 02 pour 1 mètre

Echelle de la Fig 456 de o^{m} 05 pour 1 mètre

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Fig. 457.

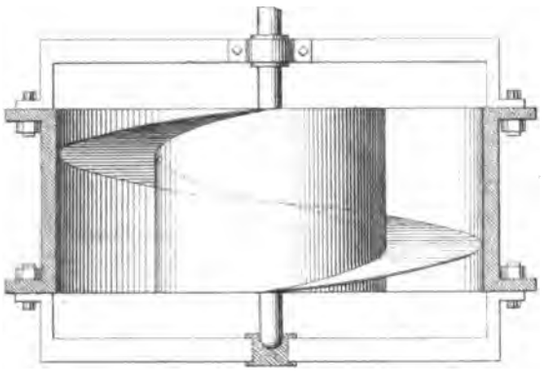


Fig. 458.

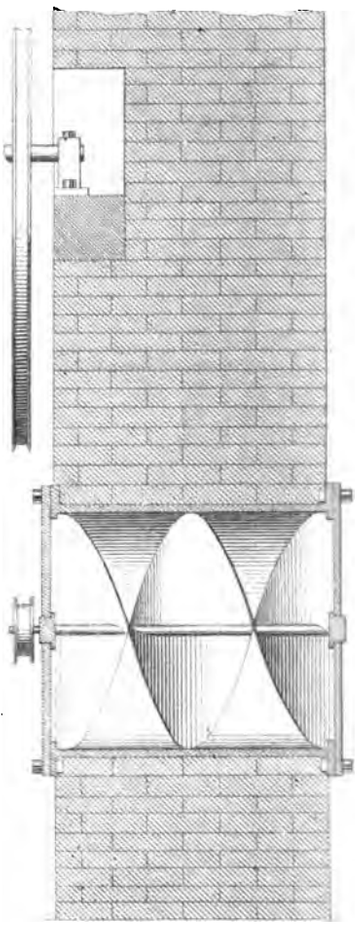
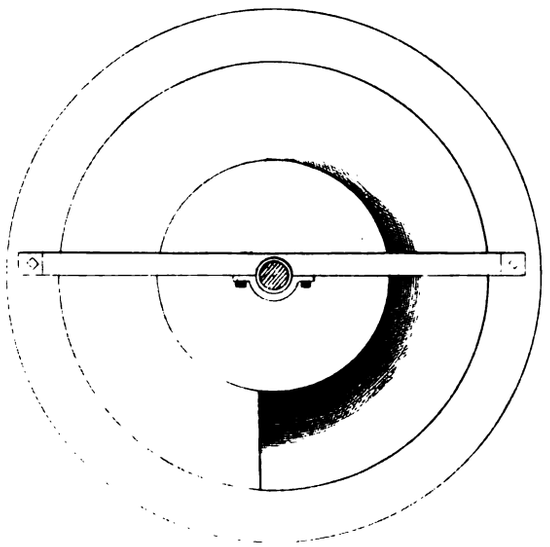
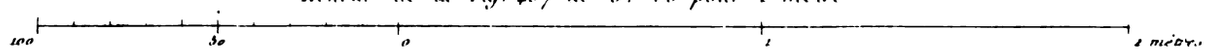


Fig. 457.



Echelle de la Fig. 457 de 0^{m} 05 pour 1 mètre



Echelle des Fig. 458 et 459 de 0^{m} 04 pour 1 mètre

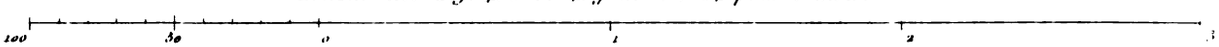


Fig. 459.

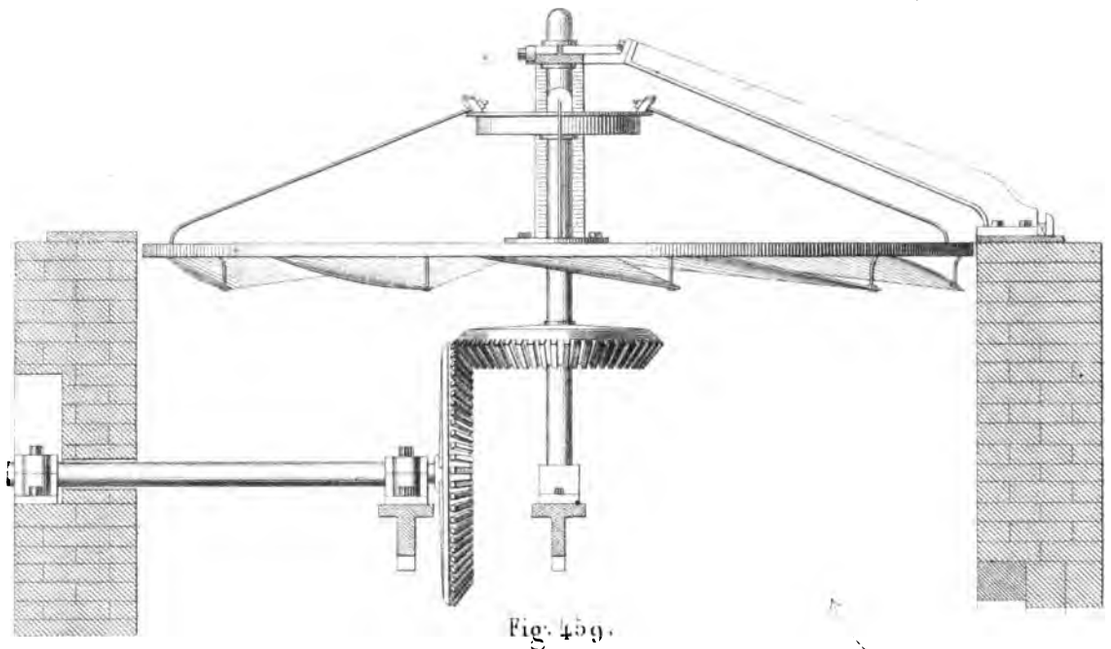
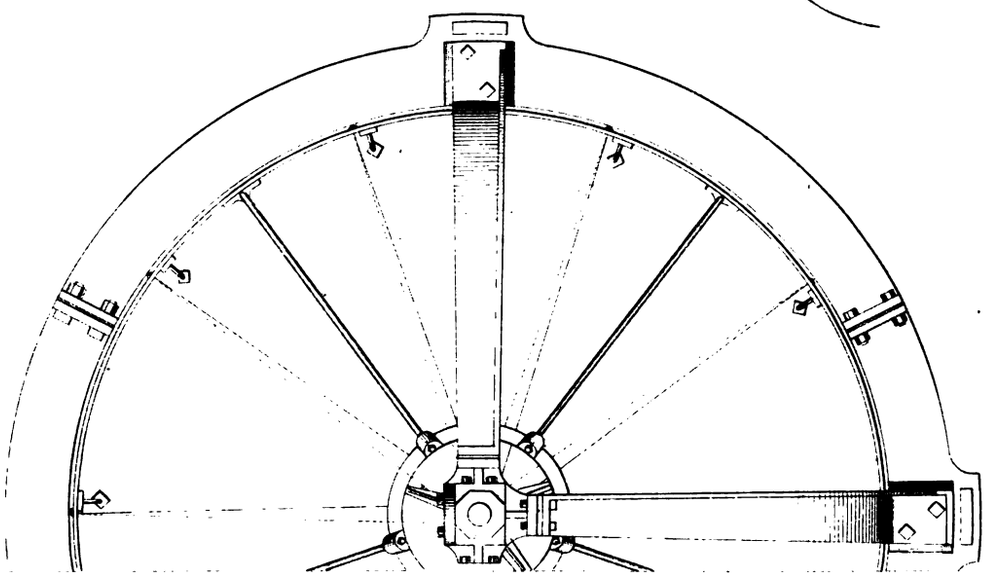


Fig. 459.



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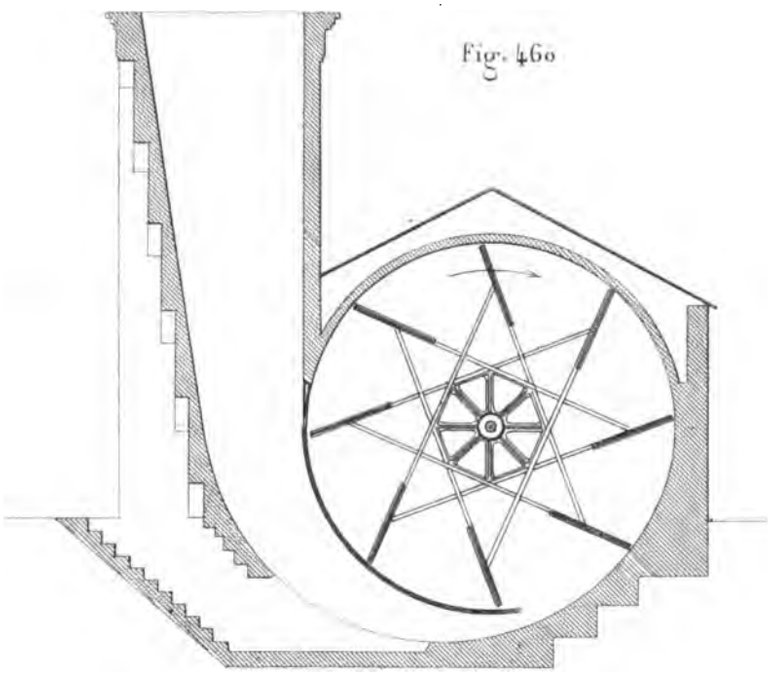
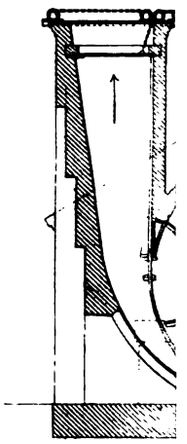
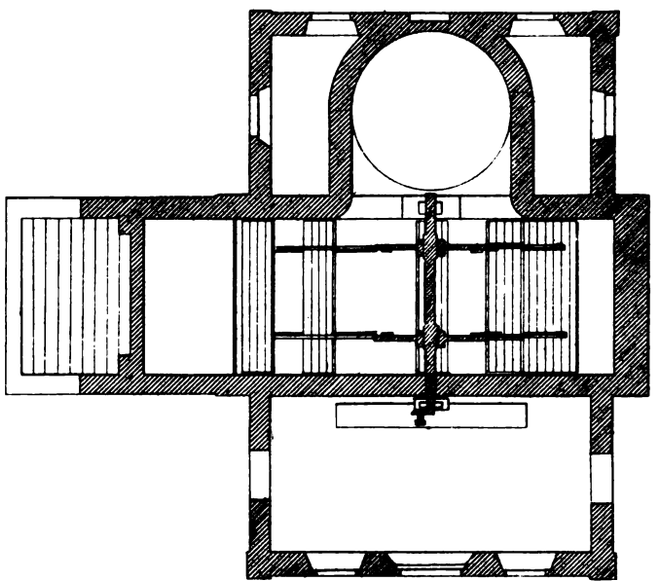
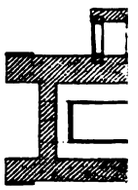


Fig. 460.







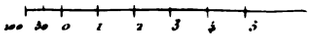


Fig. 461.

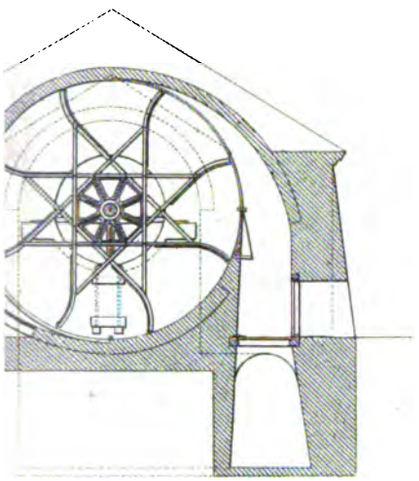


Fig. 461.

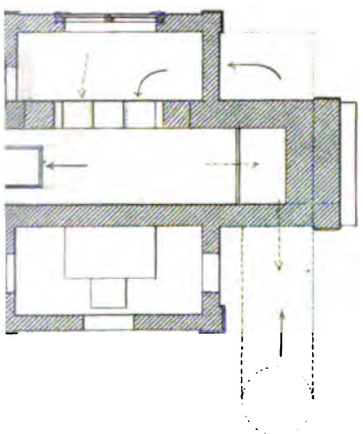


Fig. 462

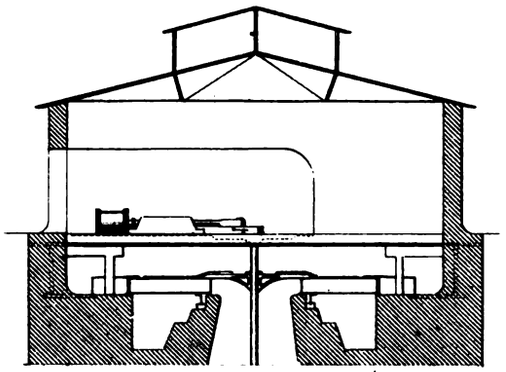
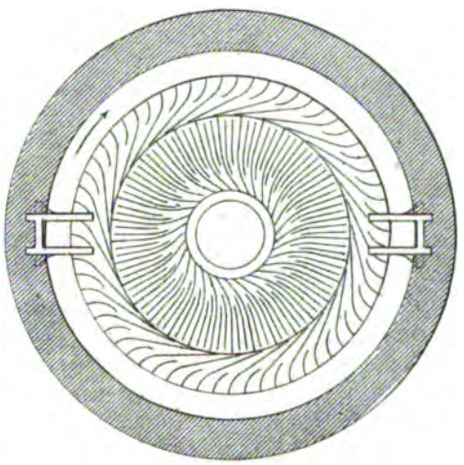


Fig. 462.



Echelle de 0^{m} 005 pour 1 mètre

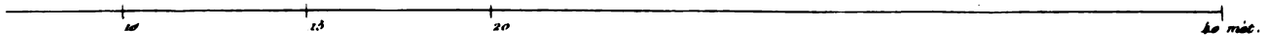


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Fig. 463.

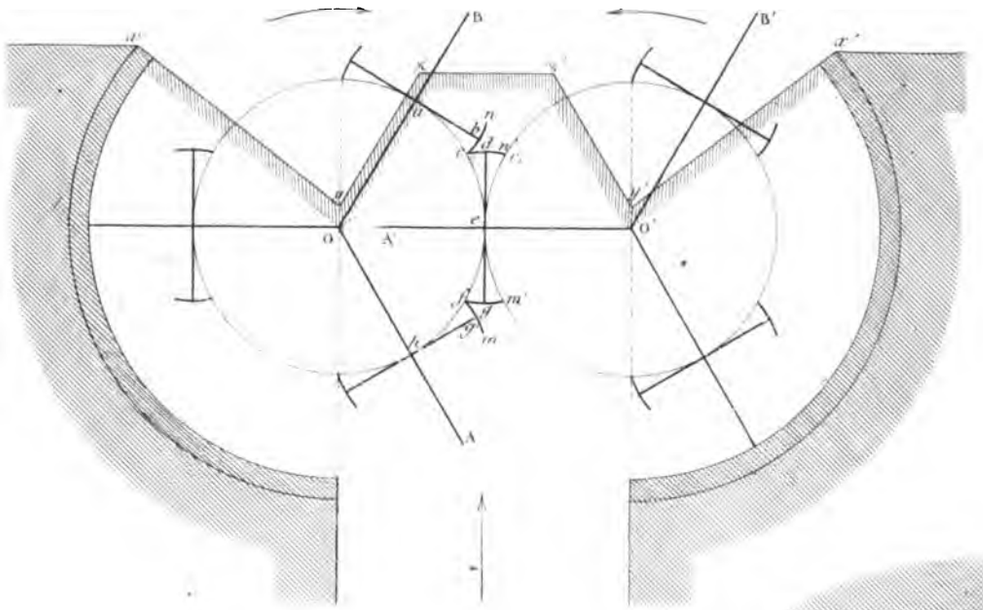
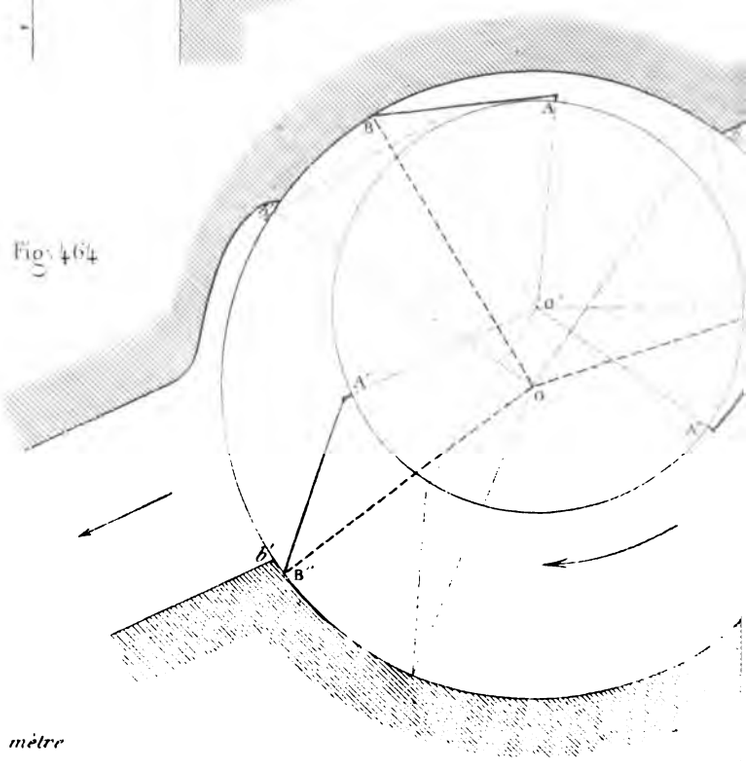


Fig. 464



Echelle de 0m 02 pour 1 mètre

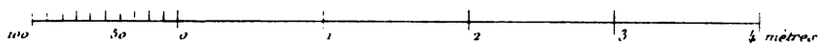


Fig. 465

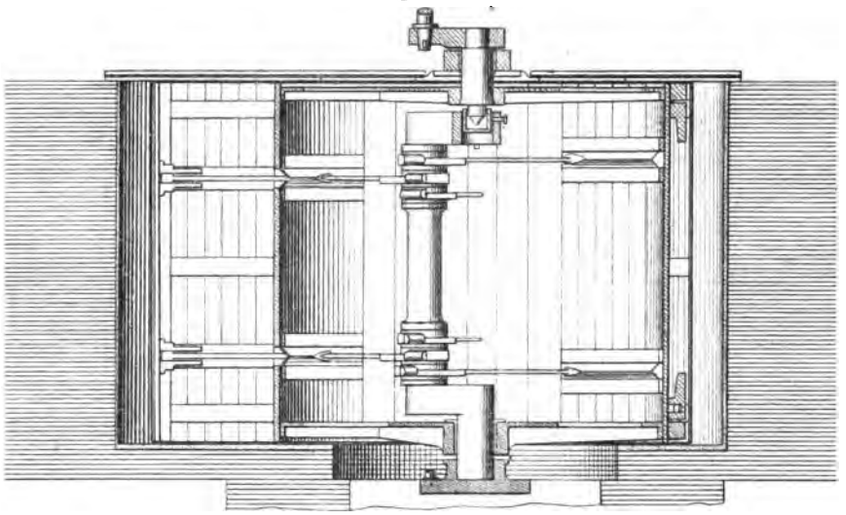


Fig. 465

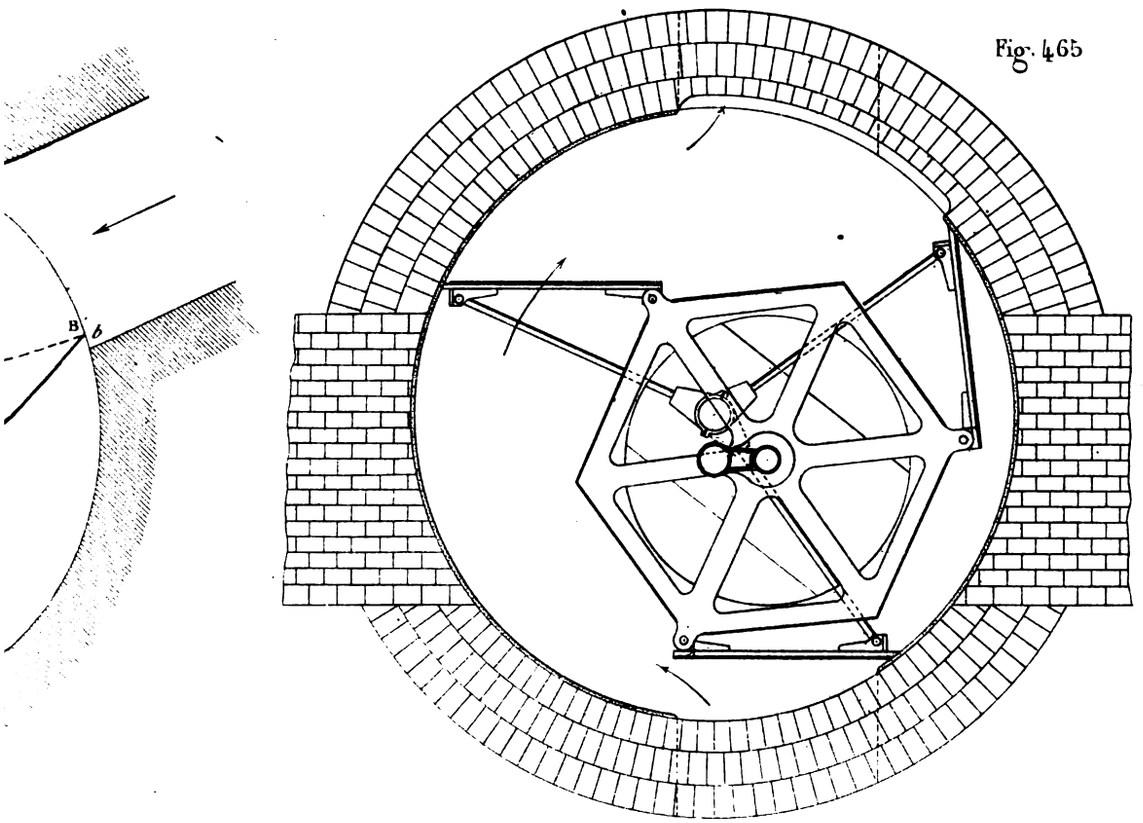


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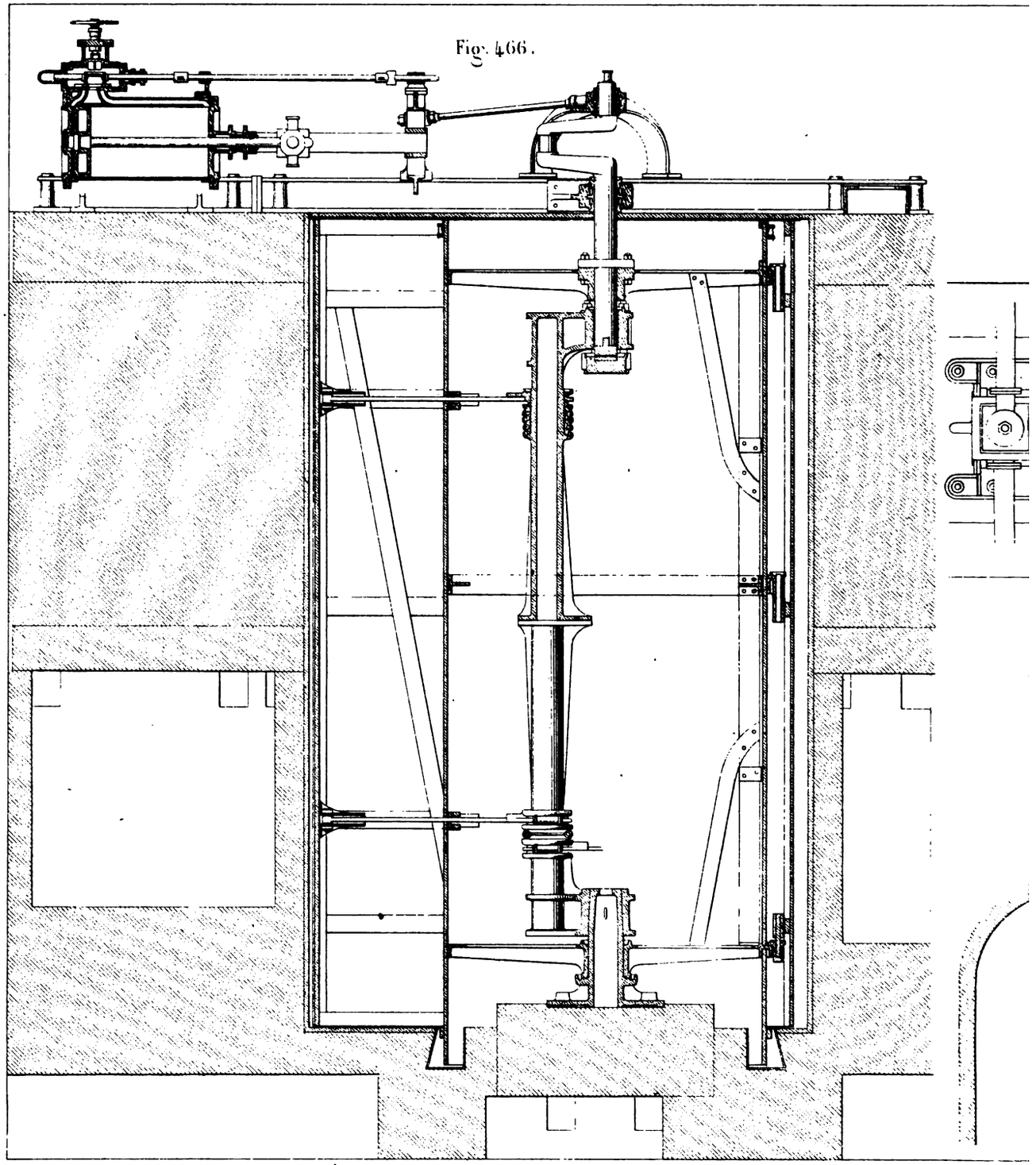
Fig. 466.



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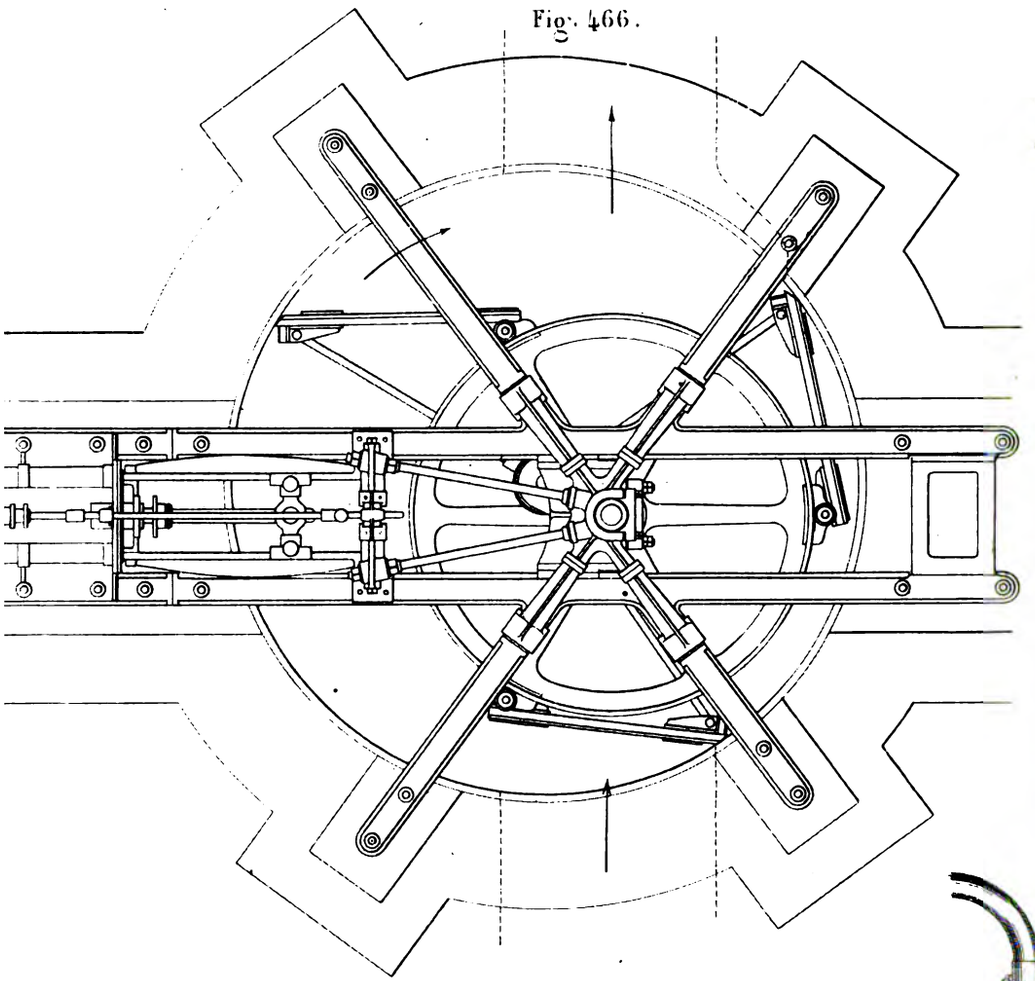
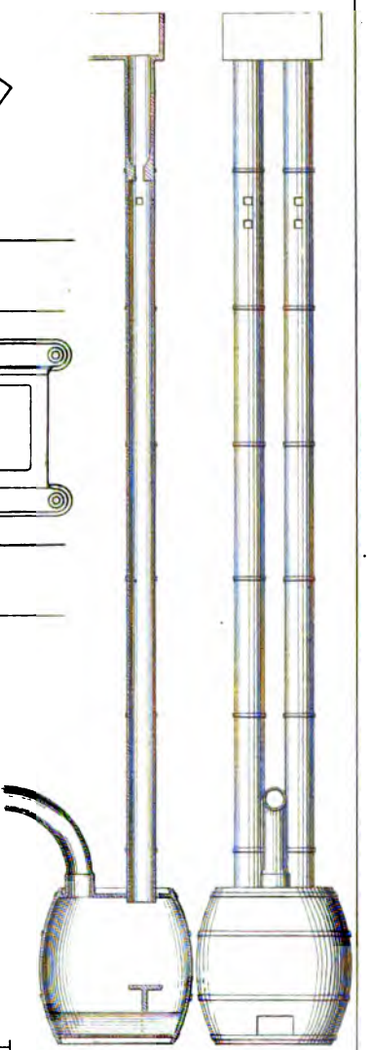


Fig. 467.



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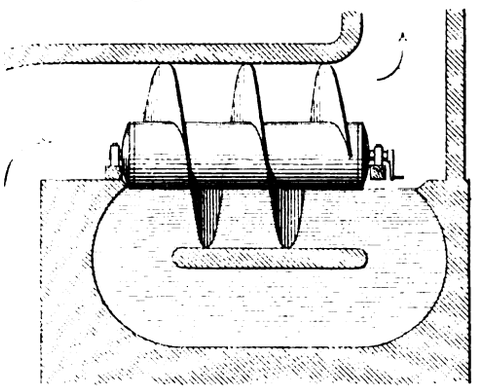
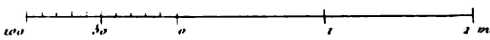
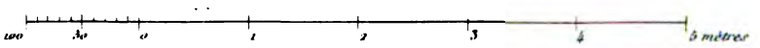


Echelle de la Fig. 466 de 0^m 02 pour 1 mètre



Echelle de la Fig. 467 de 0^m 015 pour 1 mètre



Echelle de la Fig. 468 de 0^m 005 pour 1 mètre

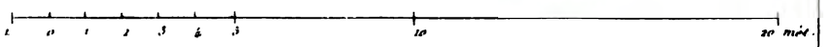


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Fig. 469.

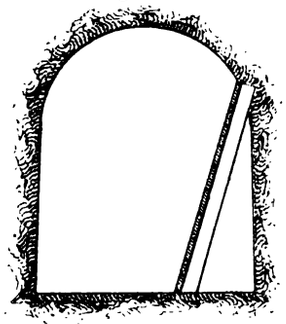


Fig. 469.

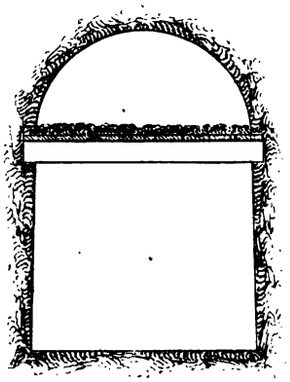
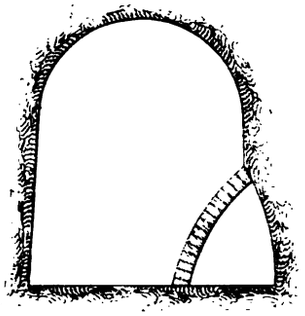


Fig. 470.



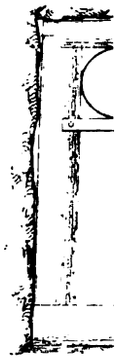


Fig. 473.

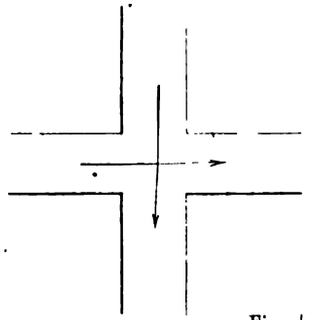


Fig. 474.

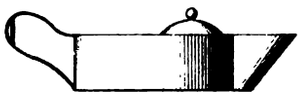


Fig. 475.

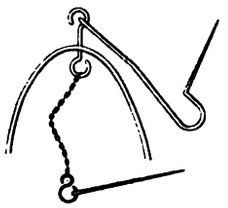


Fig.

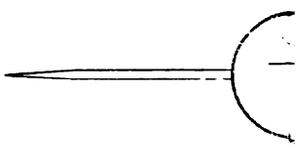


Fig. 473 A.

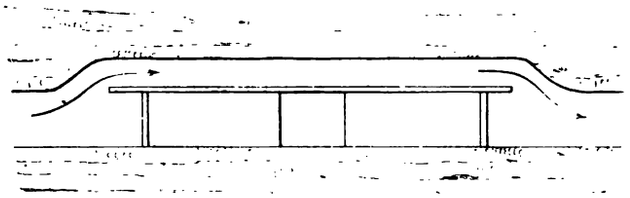


Fig. 475.

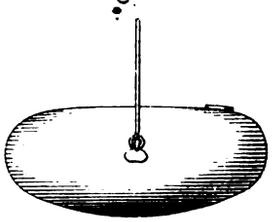


Fig.

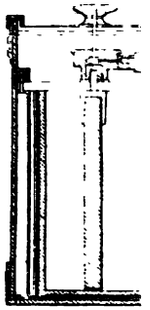


Fig. 473 B.

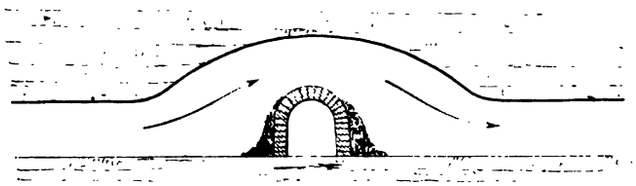
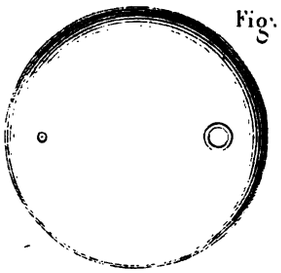


Fig. 475.



Echelle des Fig. 469 à 473 de 0^m 015 pour 1 mètre

100 50 0 1 2 3 4 5 6 7 8 mètres

Echelle de la Fig. 472 de 0^m 002 pour 1 mètre

5 0 5 10 15 20 25 50 mètres

Echelle de la Fig. 473 de 0^m 004 pour 1 mètre

5 4 3 2 1 0 5 10 15 20 25 mètres

Echelle des Fig. 474 à 476 de 0^m 25 pour 1 mètre

0.1 0 0.1 0.2 0.3 0.4 décimètres

Echelle des Fig. 478 et 479 de 0^m 40 pour 1 mètre

0.1 0 0.1 0.2 décimètres

Fig. 471.

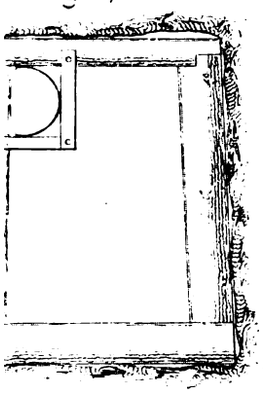


Fig. 472.

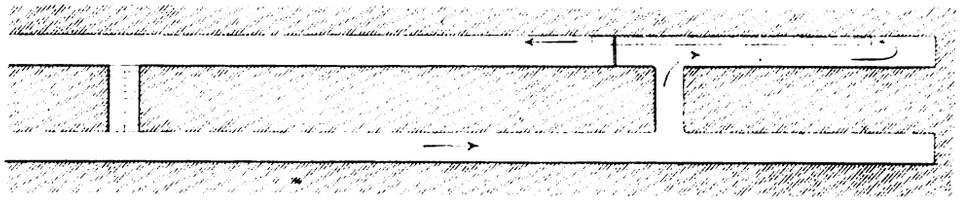


Fig. 476.

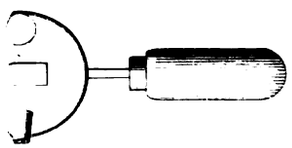


Fig. 477.

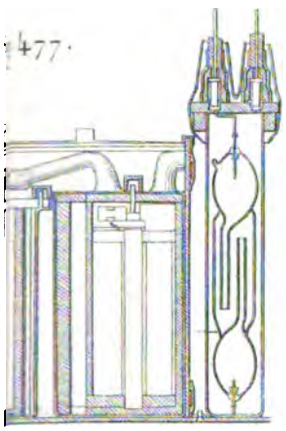


Fig. 477.

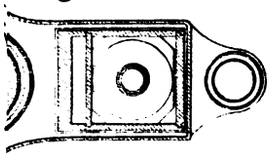


Fig. 478.

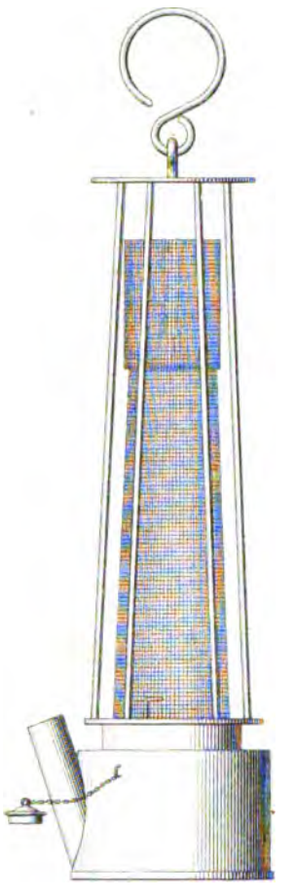


Fig. 478.

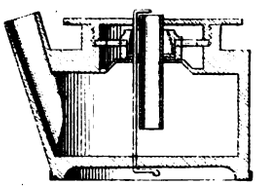


Fig. 479.

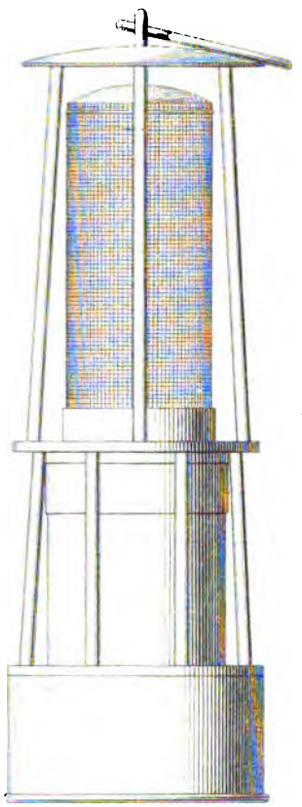


Fig. 479.

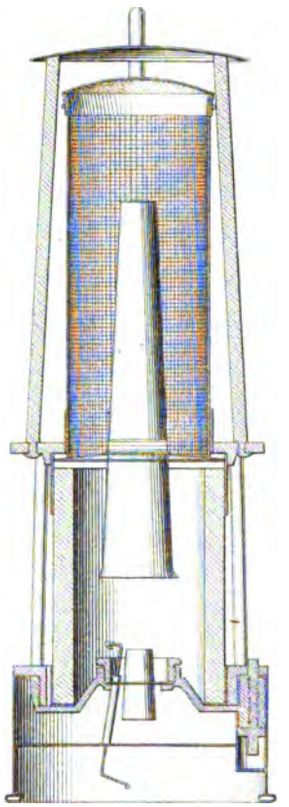


Fig. 479.

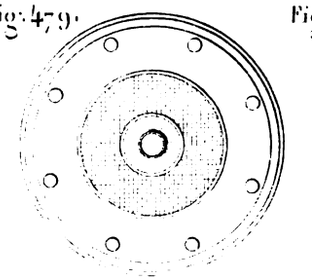
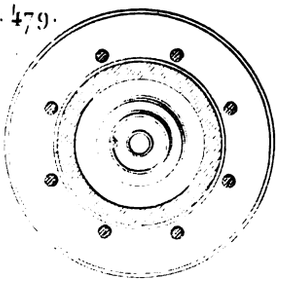


Fig. 479.



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